ALSO IN OUR NEWS SECTION ■ IBM extends mainframelike partitioning capability to the iSeries. PAGE 4
■ Automotive suppliers use PLM to meet Big Three automakers' quality mandates. PAGE 5

COMPUTERWORLD

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MAY 3, 2004 · VOL. 38 · NO. 18 · $5/COPY

Windows Datacenter Grows Up, Gains Ground

Microsoft partner Unisys upgrades ES7000 line; some users eye move to other hardware

BY CAROL SLIWA

A year ago, users of Microsoft Corp.'s high-end Windows Server Datacenter Edition might well have felt that they had ventured down a lonely path.

But announcements made last week by Unisys Corp., a prominent hardware partner in the Datacenter program, indicate that Microsoft is gradually making progress in its quest to attract enterprise customers to its high-end systems — even to the point that some of the earliest adopters are testing 64-bit Itanium hardware to squeeze out better performance.

ONLINE
Unisys touts uptime of Windows Datacenter on the ES7000.
QuickLink 46586

Unisys last week unveiled an upgrade to its ES7000 line and spotlighted its own research that showed the high availability that its servers have demonstrated running the Datacenter Edition of Windows. For two years, the company electronically collected data from 68 nonclustered servers at customer sites in North America, said Mark Feverston, vice president of enterprise server marketing.

The Blue Bell, Pa.-based hardware maker also claims that there are about 1,900 ES7000/Datacenter servers at customer sites. Sales of ES7000s were up 85% in the first quarter of 2004 compared with the same period in 2003, with about half running the Windows Datacenter Edition and half running the Enterprise Edition, according to Feverston.

"You can sleep at night

Datacenter, page 46

IT Auditors Coveted, Hard to Find

Companies compete for needed skills as Sarb-Ox deadlines near

BY THOMAS HOFFMAN

Looming deadlines for Sarbanes-Oxley Act compliance have led accounting firms and other companies that are scrambling to comply with the financial-reporting law to ramp up their recruiting of workers who have essential IT auditing experience.

For instance, Jose L. Carrera Jr., an enterprise risk management practice leader at accounting firm Singer Lewak Greenbaum & Goldstein LLP in Los Angeles, last week said he recently received job offers from two Fortune 250 companies seeking to hire IT audit directors.

Carrera said one company told him he would get a $40,000 bonus if he worked there for at least a year. The other company, an electric utility, is offering an "impressive" salary bump, a generous relocation fund for his family and a handsome stock-option package, Carrera added. "If I move, I can add a nice little chunk to my 401(k) retirement program," he said, noting that he hasn't decided yet whether he will take either job.

IT Auditors, page 16

IBM, EMC Clash Over Storage Virtualization

IBM adds support for EMC's arrays; EMC product due next year

BY LUCAS MEARIAN

IBM and EMC Corp. last week vied for an edge in the emerging market for storage virtualization technology, with IBM contending that EMC is late to the party and EMC claiming that software sold by IBM lacks functionality EMC will bring to the table.

In addition to taking verbal

IBM/EMC, page 16

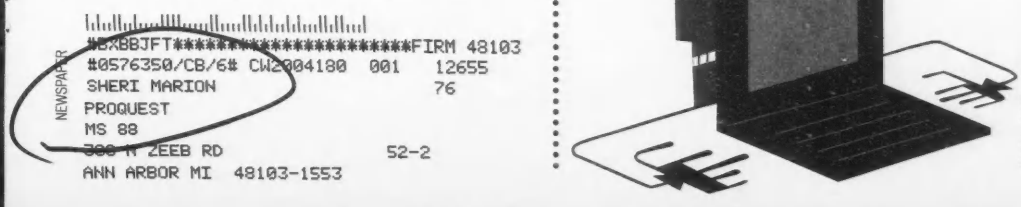
Rival Developments

IBM
■ **Announced the third release of its virtualization software,** with expanded capabilities for managing data on competing disk arrays – including EMC's.
■ **Available:** Now.

EMC
■ **Said it's working on a "storage router" device** that will include built-in virtualization software and provide high levels of scalability.
■ **Availability:** Limited beta-testing this quarter; shipments due in the first half of next year.

Spyware Sneaks INTO THE OFFICE

It's not just a home PC problem anymore – it's a corporate liability. Learn how to stop spyware in its tracks. PAGE 23



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John Minnick
Manager, Technology Development, Siemens

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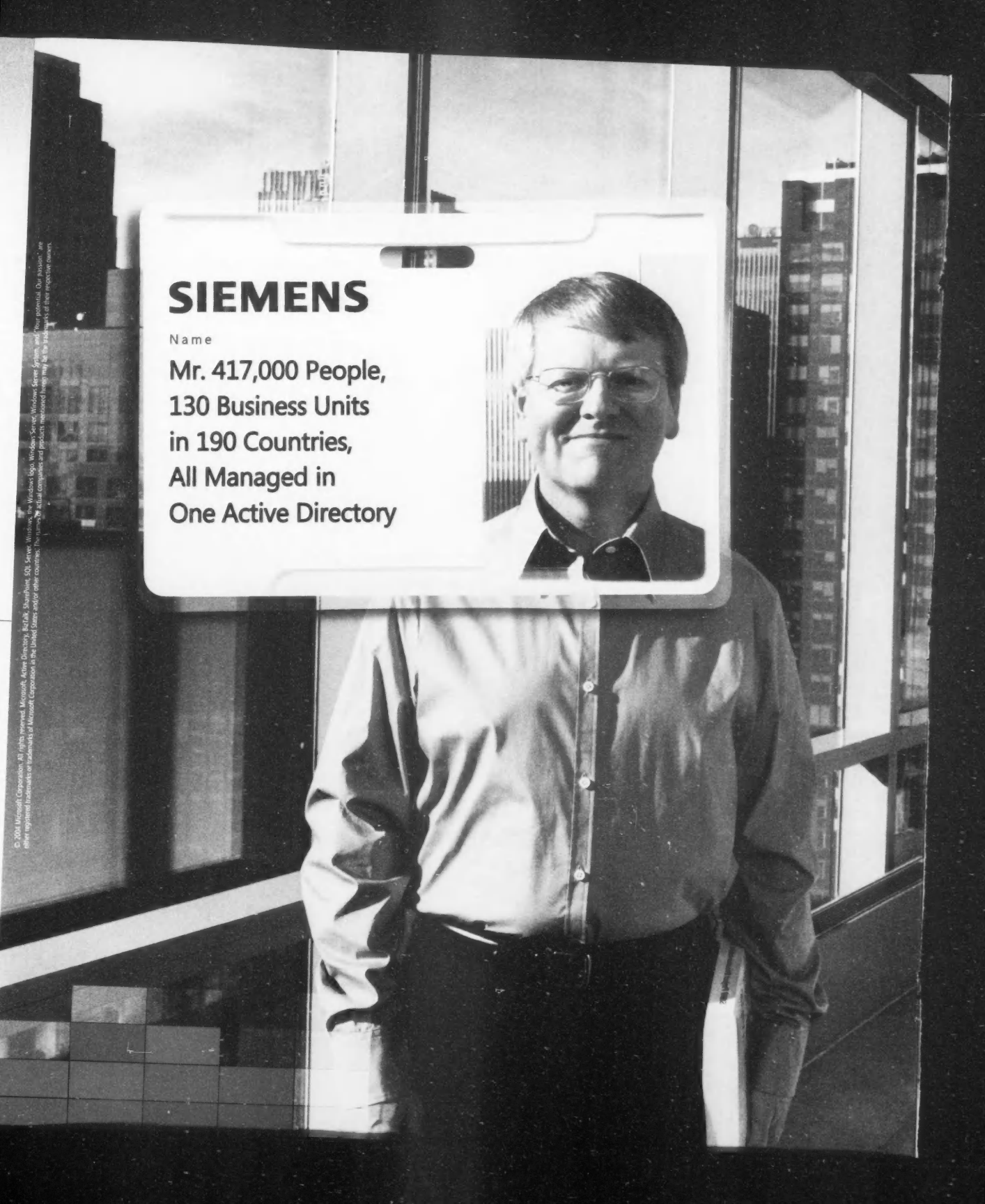

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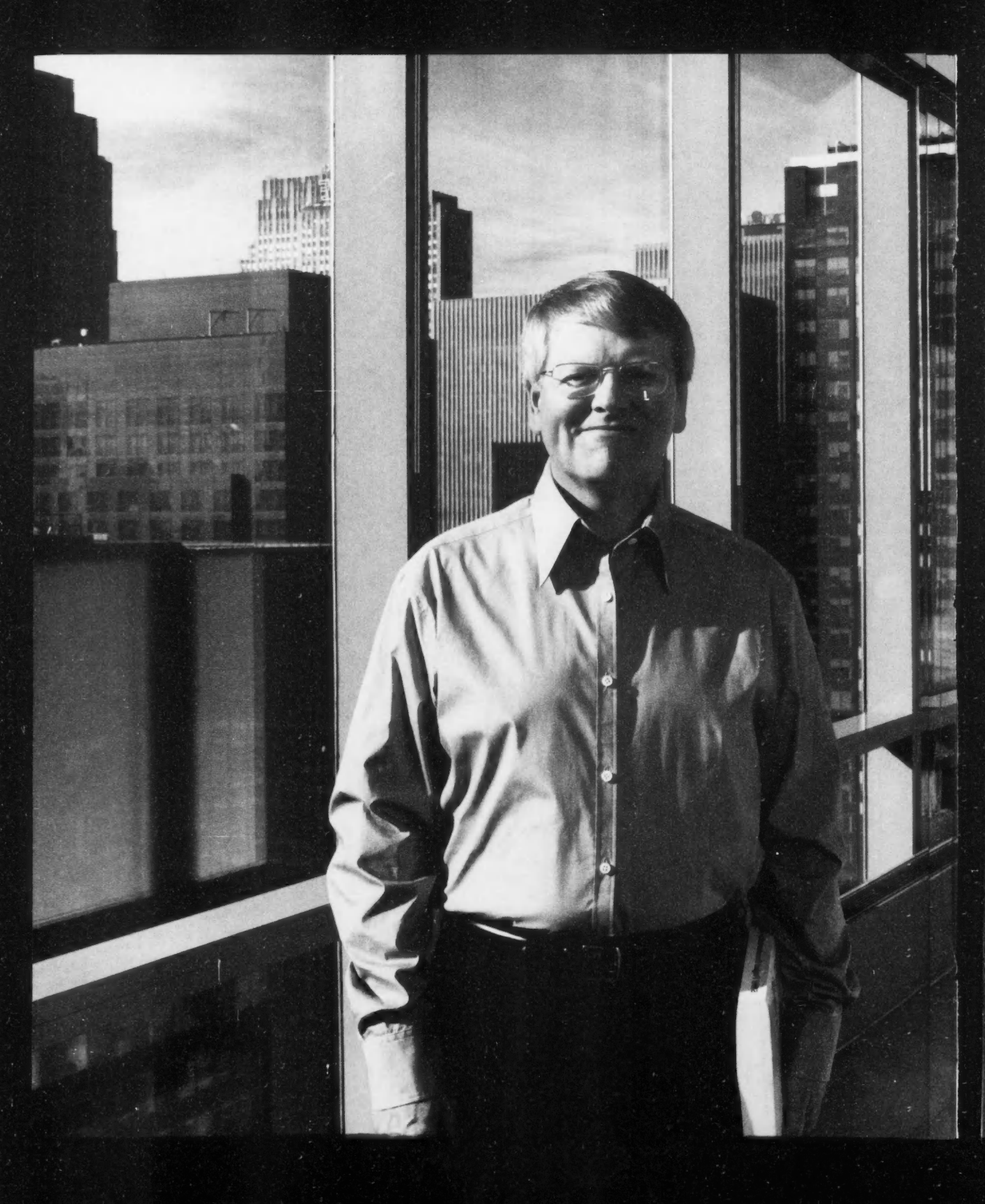

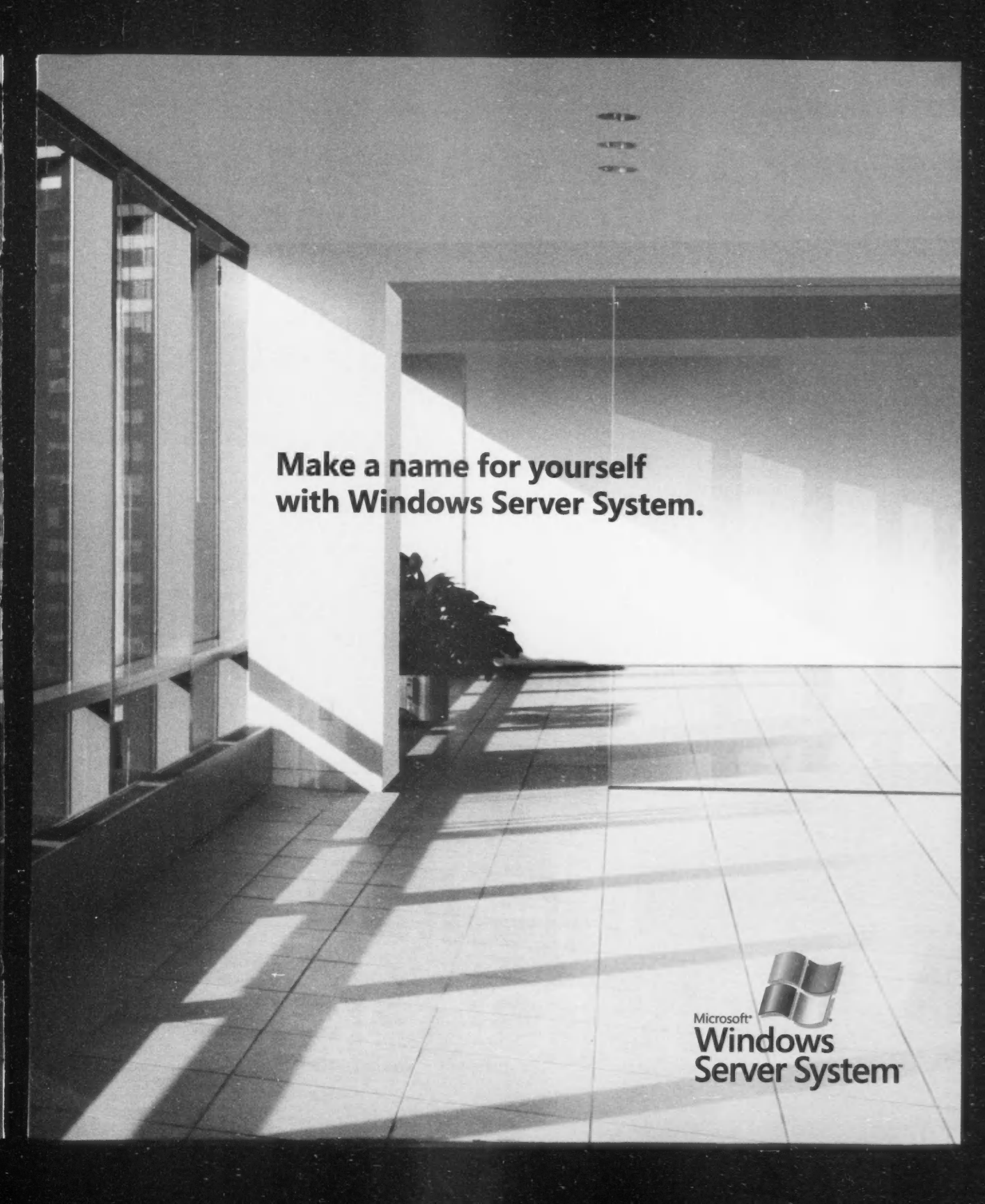
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05.03.04

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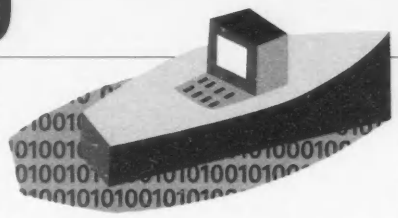
In the Management section: Harrah's Heath Daughtrey (left) uses a sophisticated process for tracking the true value of IT projects. One researcher says it's the best IT portfolio management system in the nation. **Page 33**



Navigating the WLAN Waters

In the Technology section: Continual changes in WLAN technology can make building and maintaining wireless LANs a confusing affair. Here's how administrators are coping. **Page 26**

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TECHNOLOGY

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37 **Career Watch.** Cardinal Health's IT director offers career advice to pure technologists. Plus, a look at starting IT salaries for college grads, and IT training tips.

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20 **Pimm Fox** ponders how the investment community can embrace Google's IPO just a few short years after the Internet stock implosion.

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32 **Paul A. Strassmann** argues that the brief average tenures of CIOs limit accountability and long-term strategizing.

38 **Paul Glen** sees one thing more threatening to IT staffs than offshoring: fear of offshoring.

47 Frankly Speaking: **Frank Hayes** says no matter who's to blame for Microsoft's security lapses, it's users who will pay.

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Spyware Suggestions

SECURITY: After reading the spyware feature in the Technology section on page 23, head online to see more tips from Symantec's Kelly Martin on how to keep this insidious software off of your corporate network. **QuickLink 46350**

What SCO's Linux Suits Mean for Users

SOFTWARE: Choate, Hall & Stewart partner Donald Muirhead outlines challenges and risks users face in the wake of The SCO Group's Linux claims. **QuickLink 46477**

The Perils of Multitasking

DEVELOPMENT: Assigning multiple projects to the same team may look like an efficient way to do things, but hidden costs ultimately hurt you, says columnist Johanna Rothman. **QuickLink 46547**

NAS Appliances vs. Gateways

STORAGE: Chuck Hollis, vice president of platform marketing at EMC, suggests six questions that could help you to decide which of these technologies is best for your organization. **QuickLink 46457**

Is It Possible to Ditch Microsoft Office?

SOFTWARE: OpenOffice is good enough for most enterprise needs, argues open-source advocate Eugene Ciurana. **QuickLink 46107**

What's a QuickLink?

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AT DEADLINE

Microsoft Patch Hampers Win 2k

Microsoft Corp. said a software patch released April 13 is preventing some users who have installed it on Windows 2000 systems from logging in or is causing the machines to stop responding after they boot up. The patch is designed to fix security holes in Windows, including flaws in its Secure Sockets Layer implementation. Microsoft said it's researching the problem.

IBM Releases Beta Of DB2 Upgrade

IBM this week plans to release a beta-test version of a DB2 database upgrade, code-named Stinger. The upgrade will include new features such as self-tuning and self-management capabilities, query optimization and support for 3-D geospatial data, according to IBM officials. IBM has said it's aiming to ship Stinger sometime this year.

Wal-Mart, Suppliers Start Testing RFID

Wal-Mart Stores Inc. began testing the use of radio frequency identification devices at seven stores and a distribution center in Texas. Eight suppliers are taking part in the trial, and Wal-Mart said all but two of its top 100 suppliers are on track to meet a January deadline for starting to use RFID tags.

Short Takes

PEOPLESOFT INC. this week will announce a bundle of its World green-screen business applications tailored for midsize manufacturers, home-builders and distributors. . . . SIEMENS AG's networking division in Boca Raton, Fla., today plans to introduce a high-end communications system for converged voice and data networks. The HiPath 8000 RealTime IP System can support up to 100,000 users per node and is priced at $300 per user.

IBM Enhances iSeries With Partitioning, Power5 Chips

Meanwhile, Dell advances Wintel cause by forging enterprise pact with SAP

BY PATRICK THIBODEAU

IBM TODAY will raise the stakes in the battle between its proprietary systems and Intel-based servers when it announces new iSeries servers equipped with the Power5 processor and mainframe-class virtualization technology.

IBM's eServer i5 server, the newest member of the iSeries line (formerly the AS/400), runs the i5 operating system, a new release of OS/400 that's compatible with systems delivered since 1999. The upgraded operating system provides integration of WebSphere Express and improved continuous operation capabilities. The i5 also supports IBM's AIX version of Unix in addition to Linux.

The i5 features IBM's Virtualization Engine, a set of partitioning technologies developed on IBM's mainframes. The engine allows users to partition one processor 10 ways and to use processor balancing, which enables one partition to take advantage of available processing power in another partition.

The IBM launch follows Dell Inc.'s announcement last week that it's expanding its relationship with SAP AG to help users migrate from Unix to Intel-based systems running Windows and Linux (see box, left). The initiatives announced by IBM and Dell offer users competing approaches to delivering applications such as ERP systems.

Roxanne Reynolds-Lair, CIO at the Fashion Institute of Design & Merchandising in Los Angeles, said she intends to upgrade from her AS/400 to the i5 system because the IBM approach best meets the requirements of her mission-critical processes.

"We have Intel servers and it takes more people-time, more effort to administer them, maintain them," said Reynolds-Lair, who supports about 1,000 users. The iSeries "has so much more built in that you don't have to worry about. It's also much more secure than the Intel servers," she said.

But Rick Fabrizio, CIO at PQ Corp., a producer of chemicals and other manufacturing products in Berwyn, Pa., said that he migrated from Hewlett-Packard Co.'s HP 9000 systems running HP-UX to Wintel servers from Dell several years ago and that he remains pleased with that decision.

Running a Unix system required specialized engineers, he noted. "When there was a problem, it was very time-consuming to resolve it — and expensive," said Fabrizio, who supports about 625 users. The Windows-based environment is simpler to administer, he said. "It's a lot easier, from a systems administration standpoint, [to find] someone with Intel experience than with specialized Unix experience," Fabrizio said.

At a press conference held last week in New York, Dell CEO Michael Dell said that large enterprise applications are increasingly moving to

Price Tag

IBM's i5 pricing varies by processor workload power, memory, disk capacity and other features. Starting pricing:

$9,995	$85,200
Model 520	Model 570

CEO Sees SAP Software On More Intel Clusters

NEW YORK

Henning Kagermann, CEO of SAP, spoke with *Computerworld* last week about the impact of Intel-based server clusters on his enterprise applications business. Excerpts from that interview follow:

Are you recommending to your customers that they move to Dell two- and four-way clusters? No, we can't. We have [SAP] benchmarks, and these benchmarks are standard benchmarks for all of the key hardware suppliers. If Dell can achieve very, very good figures, as we have seen in the standard environment, then it's something that is known to all customers in the world, and it's up to them to make their choice. But SAP never makes recommendations. A customer makes a choice. That's very important, because the client wants us to be, to some extent, neutral.

Based on what you're seeing in the benchmarks, do you expect to see a lot of your symmetric multiprocessing users moving to two- and four-way Intel clusters? There is a momentum, yes. How much? We will see. But if you look to the installations in the last quarters, we can see some [growth], that's true.

A lot of your customers run their systems on Unix-based Sun and IBM systems. Are you concerned that you might alienate some of those customers with the Dell agreement? No. You have to understand, all these clients, when they invested in hardware, also looked at the benchmarks at that time.

Making benchmarks is not new for SAP. We started in the 1990s, because when Unix took off, there was always the question of which Unix flavor is the best one. Now I think we have new players, and [Dell CEO] Michael Dell is changing the game. Now, for new clients there is a new benchmark, and they will make up their mind. But that's up to the customer.

– *Patrick Thibodeau*

Utility Hopes Customer Alert System Will Save Time, Energy

XCEL ENERGY INC. this week plans to go live with a system designed to automate the process of asking corporate customers to cut back on their electricity consumption, making the Minneapolis-based company the latest utility to adopt outbound communications technology.

The system, based on EnvoyWorldWide Inc.'s EnvoyProfiles software, will be used to send automated alerts to about 2,700 companies in Minnesota, Wisconsin and North and South Dakota that participate in Xcel's energy-

the Wintel platform.

"We see things turning over to standards-based products at an increasing rate," Dell said. "Our strategy is to accelerate the development of standards-based technology in the enterprise by partnering with companies like SAP."

But Ian Jarman, IBM's eServer i5 product manager, said he believes it's "more efficient and better utilization [of IT assets] to use virtualization to divide the processes that you have" than to cluster servers together. IBM offers clusters in its Intel-based xSeries platform but maintains that the virtualization offered in iSeries is the preferred method for managing resources.

The iSeries system can support Windows when an xSeries server is added to the chassis, or connected via cable, allowing the system to utilize management, security, storage and other features.

As part of the announcement, IBM said it is cutting prices on earlier iSeries systems by as much as 40% and is planning price cuts in memory as well. **46594**

Suppliers Use PLM Tools to Meet Automakers' Development Mandates

BY JAIKUMAR VIJAYAN

As an automotive supplier, Freudenberg-NOK has been required by the Big Three and other automakers to document the completion of several predefined tasks during product development and launch.

Until recently, the Plymouth, Mich.-based supplier fulfilled this so-called Advanced Product Quality Planning (APQP) obligation using a process that involved manually collecting and integrating project data from various sources at multiple stages of the development process.

Aras Corp., a vendor of product life-cycle management software, last week released a software product designed to help companies like Freudenberg-NOK automate much of that process.

Designed specifically for automotive suppliers, APQP Plus software from Lawrence, Mass.-based Aras gives users customized templates and workflows for capturing information in conformance with the APQP project management requirements. The software has made it easier to comply with APQP requirements, said Tom Gill, director of computer-aided engineering technology at Freudenberg-NOK, which is an early tester of the software.

Previously, new-product development teams would define the steps necessary to accomplish their tasks and put that information in a spreadsheet. Project managers would then check off each task as it was completed. But the paper-based system was rarely up to date, and the information wasn't easily retrievable, Gill said.

Aras' Web-based software allows Freudenberg-NOK to automate the task assignment process. It provides templates for collecting and centralizing information and a color-coded dashboard system for measuring the progress of each project. "It has made everything a lot more visible," Gill said.

Although he couldn't quantify any return on investment, Gill said that in a business where being late with a product can cost a company "tens of thousands of dollars," the increased efficiency can have a real effect on the bottom line.

The software also allows users to electronically manage and submit documents related to product parts approval, engineering change requests, bills of materials and engineering specifications.

Ease of Integration

What sets Aras' software apart from other PLM products is the ease with which it can be integrated into an automotive supplier's operations, said Victor Moreno, PLM project manager at Nemak, a Monterrey, Mexico-based company that makes cylinder heads and engine blocks for automakers.

Nemak evaluated products from other vendors, including UGS PLM Solutions Inc., SAP AG and MatrixOne Inc., before choosing Aras. Its goal is to use the software to get status updates and metrics on costs, quality and schedules in accordance with APQP requirements.

Powerway Inc. in Indianapolis provides software designed to let automakers collaborate with suppliers, said Michael Burkett, an analyst at Boston-based AMR Research Inc. But its software isn't widely deployed by suppliers, which is the market that Aras is going after, he said.

Despite the benefits, there are some caveats, Gill said. Running the bandwidth-intensive Web-based application has stressed Freudenberg-NOK's wide-area networks, he said. Moreover, Aras is still small, so due diligence needs to be observed when purchasing from the company, Gill said. Freudenberg-NOK "escrowed" the source code — that is, ensured that it will be available through a third party in the event of Aras' collapse, he said.

Pricing for Aras' software starts at $50,000 for 10 concurrent users. **46574**

PLM Aids in Airport Construction

Product life-cycle management software is predominantly used in the automotive and manufacturing sectors for product design and production functions. But companies in other sectors can benefit from the technology as well.

The development team involved in the construction of Terminal 5 at London's Heathrow Airport, for instance, is using PLM software from UGS PLM Solutions in Plano, Texas, to collaborate on projects and maintain schedules.

Cross-functional teams from construction group Laing O'Rourke Group and its partners Connell Mott MacDonald and Strategic Project Solutions Inc. (SPS) use I-deas 3-D prototyping software from UGS to create and review simulations of individual construction processes.

"It is a very complex process involving multiple stakeholders and various companies located throughout the U.K.," said Alex Kunz, a design engineer at San Francisco-based SPS.

"It was really adopted more as a construction-site tool to aid in the detailed engineering of the project," Kunz said. "The impact was the construction site was able to produce the information it required on demand." Without such a tool, there would have been significant delays in accessing needed technical information, he added.

With a project the size and complexity of the one at Heathrow, it's a good idea to use PLM software, said Michael Burkett, an analyst at AMR Research. "Any kind of major equipment design or construction project that involves a lot of complex mechanical systems and material handling" can benefit from such tools, he said.

– Jaikumar Vijayan

CONTRACTORS are using PLM software from UGS to help manage construction of a new terminal at Heathrow Airport.

SOURCE: TIM OCKENDEN, NEWSCOM

reduction savings program. The customers can qualify for lower rates by agreeing to reduce electricity use during peak periods.

Xcel tested the system in March with half of the customers enrolled in the program, said Bill Gruen, a product manager who works at the utility in Denver. The company planned to test the system again on Friday with all of the participating customers, he added.

THE NEW SYSTEM will notify customers when demand for electricity is exceeding the capacity of Xcel's power plants.

SOURCE: XCEL ENERGY INC.

Until now, Xcel relied on a two-part notification process involving autodialing software and follow-up phone calls to customers. With the new system, customers will be able to choose between e-mail, pager or cell phone text message notifications. That should let Xcel contact all 2,700 companies "within a matter of minutes," Gruen said. 46553

– Thomas Hoffman

READ MORE ONLINE

Go to our Web site for full coverage of the Xcel project:

QuickLink 46492
www.computerworld.com

BRIEFS

Users Seek Relief From SCO's Suits

DaimlerChrysler AG, one of the two Linux users sued by The SCO Group Inc. in March [QuickLink 45249], has asked a state judge in Michigan to dismiss the case because the automaker doesn't use any software owned by SCO. The other user, Memphis-based AutoZone Inc., has asked a federal judge in Nevada to put its case on hold until a series of Linux-related lawsuits pitting SCO against IBM, Novell Inc. and Red Hat Inc. are resolved.

DaimlerChrysler Outsources to EDS

In other news, DaimlerChrysler announced an outsourcing and IT services deal with Electronic Data Systems Corp. EDS will oversee management of hardware operations and server-based software at DaimlerChrysler's Michigan facilities as part of the deal, which will also include a server consolidation program. The financial terms weren't disclosed.

IBM Extends Morgan Stanley Agreement

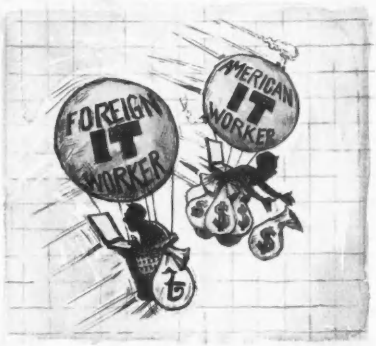
IBM said it has extended a 5-year-old IT services agreement with Morgan Stanley and changed the deal from a fixed-cost contract to one with a variable cost structure based on resource utilization. The New York-based financial services firm will also share a data center with other IBM clients instead of having a dedicated one. IBM estimated that the contract will be worth $575 million over five years.

Short Takes

MICROSOFT CORP. said it has delayed the planned release of Service Pack 2 for Windows XP from June to "sometime in the third quarter" because the update needs more testing and modifications. . . . UNISYS CORP. is setting up a technology development lab in Bangalore, India.

ON THE MARK

HOT TECHNOLOGY TRENDS, NEW PRODUCT NEWS AND INDUSTRY GOSSIP BY MARK HALL



MATTHEW FAULKNER

A Simple Solution to Moving IT Jobs . . .

. . . offshore is to make U.S. developers' salaries more competitive. But who wants to take pay cuts? Plenty of you, it seems. That's the discovery made by Mark Jennings, a vice president at Synergroup Systems Inc. in Aliso Viejo, Calif. His company augments personnel shortages in IT shops with U.S.-based workers — a rare phenomenon of late. But, Jennings says, "if you're willing to let them work from home," U.S. programmers will take wages that are competitive with those of workers in Bangalore. How competitive? How about $38 per hour? That's what Jennings proved with three pilot projects using mainframe developers with 15 to 20 years of experience. Two of the companies signed follow-on contracts with Synergroup and kept the jobs that were once destined for overseas inside the U.S. Jennings says he initially thought that most of the developers he'd recruit would be "between the coasts, where the cost of living is lower." So he was surprised when he found many willing programmers who live in pricey Los Angeles. Given that U.S. workers are willing to be flexible on wages, Jennings thinks CIOs "should look in their own backyard" before choosing overseas staff.

Look to offshore companies for jobs . . .

. . . in the U.S., suggests the Organization for International Investment, a Washington-based group representing 120 foreign subsidiaries doing business in the U.S. According to the OFII, these subsidiaries employed more than a half-million IT workers here last year. Better still, it said foreign subsidiaries pay on average 19% more than cheap U.S. firms. To date, no Indian-owned subsidiary belongs to the OFII.

IT helps VC dream IPO . . .

. . . once again. Venture capitalist Mark Levine, managing director of Core Capital Partners LP in Washington, estimates that 90% of start-up companies that achieve success today do so by a merger or acquisition. Mergers and acquisitions in the past accounted for only about half of these fruitful "exit strategies," with the other half of the best high-tech start-ups going public. Levine sees signs of a swing back toward that 50/50 split, though the breakdown may be closer to 60% mergers and acquisitions and 40% initial public offerings. IT managers help venture capitalists determine not only the viability of potential investments, but also the exit strategies for current ones by explaining how they would buy a young vendor's product, Levine says. For example, if you say a product is ideally suited for a direct sales model, that start-up might need more capital and be more prone to an IPO. But a company that has technology that's ideal for integrators may be a good candidate for a merger and acquisition.

LEVINE: IPOs are back, baby!

Massive BI queries answered . . .

. . . in the blink of an eye. That's the charter of Herndon, Va.-based Clareos Inc. The business intelligence company uses cheap Intel boxes in a massively parallel processing configuration to swiftly analyze gobs of data. CEO Steve Foley claims that his software, CrossCut, can slice through 2TB of data strewn across 16 billion rows in a table to extract an answer faster than any competitor. If you want even more speed, you only need to add another low-cost server to share the load. And those low-cost servers will be even cheaper in August, when Clareos plans to ship CrossCut 2.0, which will run on 64-bit Linux machines. Pricing starts around $200,000.

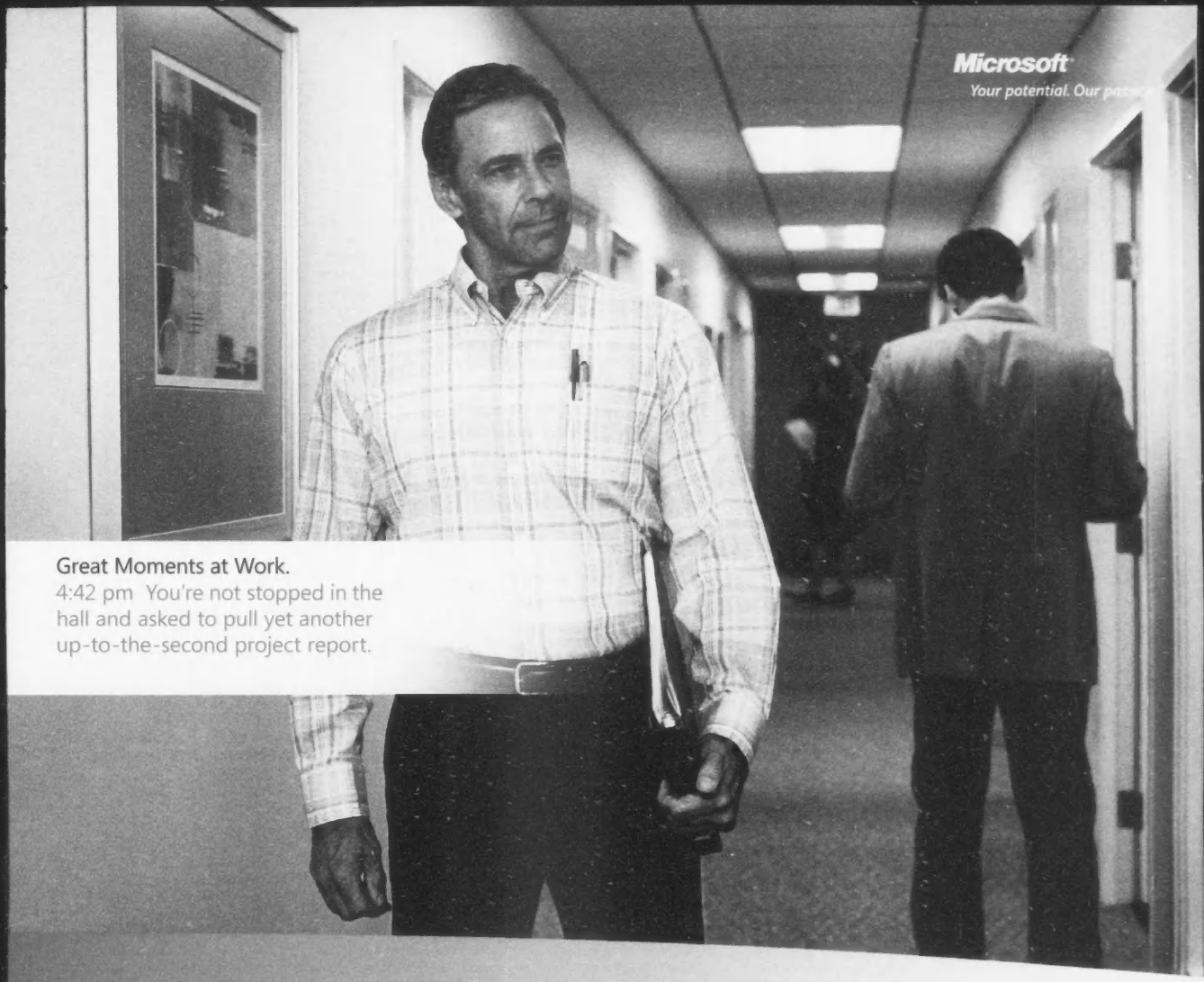
NetScaler knocks F5's tardy . . .

. . . addition of compression to its network load-balance technology. Mark Weiner, a vice president at Santa Clara, Calif.-based NetScaler Inc., claims that F5 Networks Inc. "is late for this [compression] game." Seattle-based F5 has said compression will be added to its technology soon. But Weiner boasts that with this week's announcement of an upgrade to the NetScaler 9000 network traffic management appliance, F5 is even further behind. NetScaler AppCompress, part of the July release, will compress all TCP-based applications, not just HTTP data. The upgrade also includes AppDefend, which can inspect packet payloads and apply security policies to them. The NetScaler 9000 starts at $115,000.

Don't rely on technology to defend . . .

. . . your systems from viruses, Trojan horses and worms. That's the advice of John Watters, CEO of iDefense Inc. in Reston, Va. Antivirus technologies, he deadpans, "are the first to tell you that your house has burned down." But you need to know about product vulnerabilities before they are exploited by crackers. For that you need human intelligence evaluating products targeted by bad guys. That's what his iAlert service does for 1,500 products from 83 vendors while supplying links to patches. And through its partnership with Secure Elements Inc. in nearby Herndon, patch updates can be done automatically. **46550**

400 NUMBER OF VIRUSES, TROJANS AND WORMS RELEASED PER MONTH.



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Health Care IT Plans Get a Renewed Push

Bush, industry groups try to jump-start adoption of new medical technologies

BY BOB BREWIN

SEVERAL SLOWLY emerging health care technologies were given stimulants last week, as President Bush called for the development of electronic medical records and two health care industry groups took steps to encourage the use of automated prescription-ordering systems and bar coding on drugs.

In a speech last Monday, Bush described paper-based approaches to maintaining medical records as "antiquated" and said that within 10 years, he wants all U.S. citizens to have electronic records that can be transmitted among health care providers. Use of the technology could reduce annual health care costs "by billions of dollars," Bush proclaimed.

In a related development on Friday, the Washington-based Joint Commission on Accreditation of Healthcare Organizations closed the public comments period on a proposed rule that seeks to jump-start the use of bar-coding technology by hospitals to correlate patient identification data with medications. The rule would require the use of bar codes by January 2007 to ensure that patients receive the correct medications.

Also last week, The Leapfrog Group, a Washington-based organization made up of 150 large employers and insurers, said it plans to start posting on its Web site the results of surveys it conducts to see whether hospitals have adopted 30 patient-safety practices, including the use of computerized physician order entry (CPOE) systems. Leapfrog officials said the postings are an effort to steer patients to hospitals that have instituted the procedures it recommends.

Dr. Brian Jacobs, director of technology and patient safety at Cincinnati Children's Hospital Medical Center, said the separate developments "lit a fire underneath health care IT." But Jacobs cautioned that development of truly portable electronic medical records could take more than 10 years. He said his hospital has difficulty exchanging information among four internal systems from different vendors, let alone with other hospitals. Jacobs added that although technologies such as electronic medical records and CPOE could improve patient safety, it's difficult to pinpoint a hard-dollar return on investment that health care providers could get from such projects — other than a potential reduction in lawsuits stemming from medical errors.

But the Center for Information Technology Leadership, an organization in Wellesley, Mass., that's backed by Partners HealthCare System Inc. in Boston, has identified a total of $86 billion in annual savings that hospitals, insurers and other industry participants could realize by standardizing the exchange of information, said Eric Pan, a researcher at the center.

The U.S. Department of Health and Human Services last year commissioned a unit of the National Academy of Sciences in Washington to design a model of an electronic patient record that health care companies could use at no charge [QuickLink 39674].

Increased attention to standards is essential to developing a national electronic records system, said James Mormann, CIO at Iowa Health System in Des Moines. Health care professionals and technology vendors have yet to agree on the definition of an electronic medical record, he said.

Michael Myers, vice president and general manager of McKesson Corp.'s Horizon Clinical Solutions division, said there currently are "broad variables" in the format of electronic records, ranging from an intelligent card that's packed with patient data to Web-based medical records. **46587**

DIFFERENCE OF OPINION

Where health care companies should start in better automating their operations depends on whom you're talking to:

QuickLink 46618 www.computerworld.com

TIMELINE

Health Care IT Developments

- **JUNE 2003** — A group of hospitals, federal agencies and IT vendors launch a pilot network to serve as a testbed for proposed technology standards.
- **JULY 2003** — The Department of Health and Human Services commissions development of a standardized model of an electronic medical record.
- **FEBRUARY 2004** — The Food and Drug Administration mandates that by April 2006, pharmaceutical companies must apply bar codes to thousands of drugs dispensed in hospitals.
- **APRIL 2004** — President Bush unveils a plan to promote development of portable electronic medical records. Health care accreditation group proposes a rule that would require hospitals to use bar-code technology to match drugs and patients.

Citrix Shifts Focus to Remote Access

Wants to move past server-based app delivery

BY PATRICK THIBODEAU

Citrix Systems Inc. is setting its sights beyond server-based application delivery to the desktop, with a new focus on delivering applications to a variety of devices and providing secure remote-access capabilities.

The new focus yielded last week's release of MetaFrame Access Suite 3.0. The update to Citrix's flagship product includes session-persistent features that automatically reestablish network connections while preserving information when a connection is lost.

Remote access is "what's driving our strategy," said Mark Templeton, CEO of the Fort Lauderdale, Fla.-based company. Access to applications from remote locations is increasingly a "strategic element" in a business's IT infrastructure, he said.

It's a message that makes sense to Charles Redding, CIO at Masco Contractor Services Inc., a unit of Taylor, Mich.-based Masco Corp. Redding said he intends to use Citrix's remote capabilities in his fleet of more than 8,000 vehicles.

CITRIX SNAPSHOT

Citrix last week reported revenue of $161.3 million for the quarter ended March 31. That's a 12.4% increase over the same quarter a year ago.

Masco already has Global Positioning System units deployed in company vehicles but wants to extend application access to those trucks. Redding is investigating the possibility of outfitting his vehicles with handheld devices or tablet computers with touch screens.

"We're blue-collar workers — our guys are not good typists," he said.

Having that capability would allow Masco to send new assignments to each truck. And as materials are used on a job, inventory could be updated in real time, said Redding. The company is also investigating integration of a voice-over-IP system.

Redding said he's convinced the Citrix technology will work and wants to deploy it over the next year. The question is whether the company can achieve network coverage that reaches at least 60Kbit/sec. "The only thing that scares us is the coverage area," he said, noting that the return on investment will depend on the cost of the network.

Citrix primarily supports Microsoft Windows but also supports major Unix variants including IBM's AIX, Sun's Solaris and HP-UX.

While its server-based system delivers applications to a Linux desktop, Citrix doesn't currently support Linux on the server.

There are still too few enterprise Linux applications to make that viable, said Bob Kruger, Citrix's chief technology officer. "Until that comes and we see that demand" for Linux support, "there's no point," he said.

It would take only about six months to roll out Linux support once the need was identified, said Kruger. **46581**

MORE ONLINE

Citrix CEO Mark Templeton talks about enterprise vendors, Microsoft and the philosophy of nonalignment:

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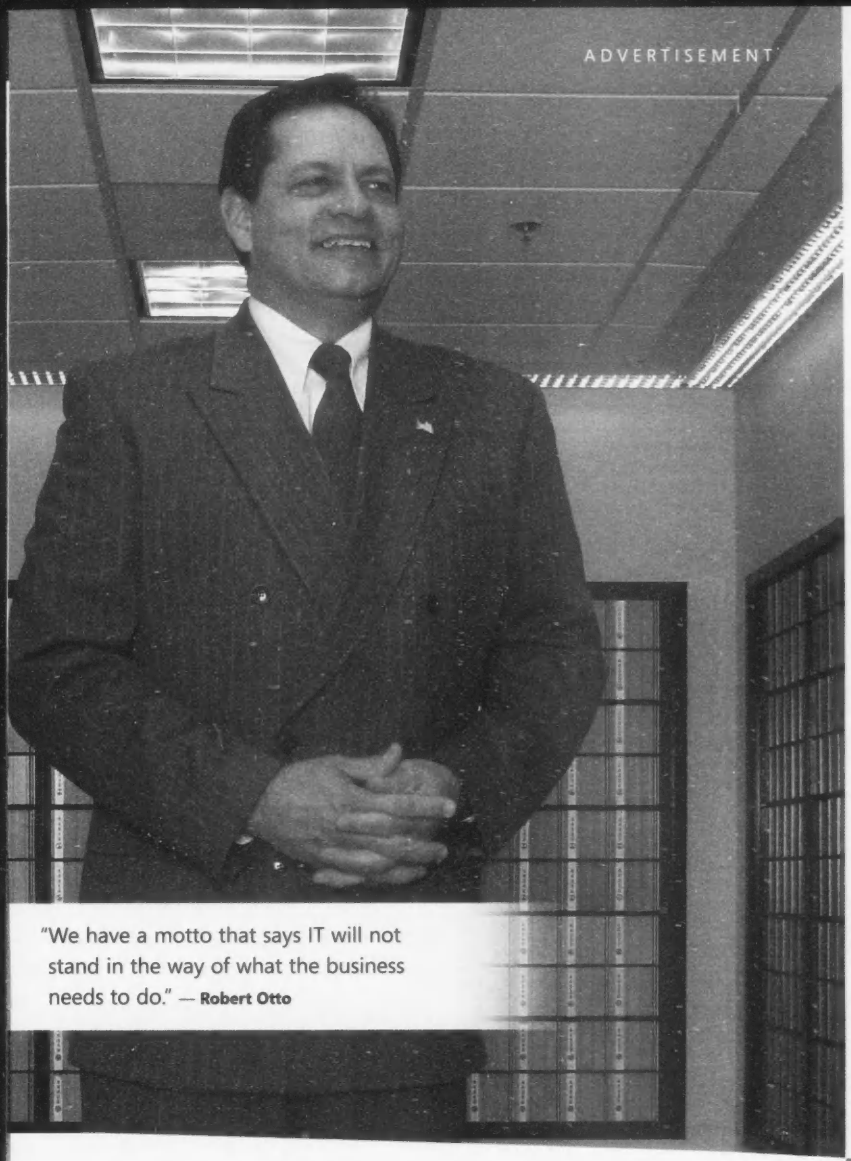

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BRIEFS

Microsoft Acquires Apps, Query Tools

Microsoft Corp. said it has acquired ActiveViews Inc. and will add the Provo, Utah-based company's query and reporting tools to its SQL Server Reporting Services software. Microsoft has also agreed to buy purchase-order and cash-flow management software that works with its Great Plains business applications from Encore Business Solutions Inc. in Winnipeg, Manitoba. Financial terms weren't disclosed.

Dell Wins PC Deal With Pennsylvania

Dell Inc. said it has signed a PC hardware and IT services contract with Pennsylvania's state government that could be worth up to $144 million over four years. The deal includes desktop and notebook PCs, plus monitors. The state will buy products directly from Dell and then offer volume-pricing deals to agencies.

Nasdaq Tests for Disaster Recovery

Nasdaq Stock Market Inc. said it had zero downtime during two disaster recovery tests that involved its data centers and systems at 50 financial services firms. The tests were designed to check whether transaction and reporting processes would function in a disaster. The tests were done at Nasdaq's primary data center in Connecticut in February and at its backup facility in Maryland last month.

Short Takes

Struggling software vendor i2 TECHNOLOGIES INC. said it will get a $100 million cash infusion from Q Investments Ltd. in Fort Worth, Texas, plus $20 million from CEO Sanjiv Sidhu. . . . BMC SOFTWARE INC. said it will buy management tools vendor MARIMBA INC. in Mountain View, Calif., for $239 million in cash.

Nortel Ousts CEO Amid Cloudy Financial Picture

Two other execs fired; vendor delays Q1 numbers, will revise 2001-'03 results

BY MATT HAMBLEN AND LAURA ROHDE

NORTEL NETWORKS Ltd., which is being investigated for possible accounting improprieties by securities regulators in both the U.S. and Canada, last week fired CEO Frank Dunn as well as its chief financial officer and its corporate controller.

Nortel also delayed the release of its first-quarter financial results, which was due to take place last week, and said it will have to revise the numbers it reported for all four of last year's quarters and for 2002 and 2001.

Dunn, CFO Douglas Beatty and controller Michael Gollogly were all "terminated for cause" as part of an ongoing internal review by the company's audit committee, Nortel said. Beatty and Gollogly had been on paid leaves of absence since March 15. Brampton, Ontario-based Nortel made their interim replacements permanent and named board member William Owens CEO.

John Haltom, network director at Erlanger Health System in Chattanooga, Tenn., has made a $2.5 million investment in Nortel's IP telephony equipment over the past year and is running eight separate beta tests with Nortel gear.

Despite the increasing turmoil at Nortel, Haltom said Erlanger is going ahead with plans to converge its voice and data networks on the vendor's technology across 17 health center campuses in southeastern Tennessee.

"As far as the Nortel firings and the impact on us, we don't see any real earthshaking impact," he said. "Nortel stock is going to tank again, but I feel the technology viability of the company is just as good as ever. Their convergence model, in my eyes, is the leader of the pack in terms of an IP multimedia solution. I feel they even have a leg up on Cisco."

"To our customers I say, 'We will not let this distract us.'"

WILLIAM OWENS, CEO, Nortel Networks

But Haltom said he hopes Owens isn't a "hatchet man" who will cut jobs that affect customers.

Owens was quick to try to reassure users like Haltom, as well as Nortel's shareholders. "To our customers I say, 'We will not let this distract us,' " said Owens during a teleconference.

But Jeffrey Kagan, an independent telecommunications analyst in Atlanta, said the shake-up could spell more trouble for Nortel.

"The bad news is this is going to be a mess for Nortel for a long time until they sort through it all," Kagan said. "The good news is, at this point, it seems to be a Nortel-specific issue and not a general industry issue, so hopefully it won't negatively impact the rest of the competitors."

Gartner Inc. analyst Mark Fabbi predicted that the management overhaul will have a severe effect on user confidence in Nortel.

"The firings undermine all the positive momentum it seemed like Nortel had created with enterprise customers and wireless [technology] in the last year," Fabbi said.

Owens and the other new executives are "not people who are known for their technology vision," he added. "They are interim folks hired to clean house, and then we'll see what happens in a year or so." **46579**

Rohde writes for the IDG News Service.

MCI Expands Managed Security Services Offerings

BY JAIKUMAR VIJAYAN

MCI Inc. last week introduced a range of managed security services aimed at delivering customized network protection for business users.

The new offerings include intrusion protection, managed firewall, vulnerability scanning, antivirus and antispam services.

The company also announced a partnership with security vendor VeriSign Inc. under which the two companies will deliver a co-branded user-authentication service based on public-key infrastructure (PKI) technologies.

"We needed items in our portfolio for [companies of] different sizes and needs," said Tom Walton, vice president of security services at MCI, formerly known as WorldCom Inc.

MCI's move to expand its security offerings isn't surprising, said Pete Lindstrom, an analyst at Malvern, Pa.-based Spire Security LLC. "The market for security services is hot. MCI wants in on that," he said.

Network Monitoring

With its intrusion-protection and vulnerability-scanning services to be launched later this month, the company will provide users with round-the-clock network monitoring services that can proactively identify and mitigate threats. MCI has also teamed up with MessageLabs Ltd. in Gloucester, England, to offer an e-mail scanning service for dealing with viruses and spam.

Meanwhile, MCI's partnership with Mountain View, Calif.-based VeriSign is designed to allow the company to offer digital-certificate-based authentication and digital signature support for e-mail and Web applications.

MCI's New Services Include:

- A PKI-based authentication service with VeriSign
- An e-mail filtering service with MessageLabs
- Network vulnerability scanning with Internet Security Systems
- Intrusion-detection and -prevention services

Stronger authentication services such as those being offered by VeriSign and MCI are going to be "incredibly important" as companies move toward Web services and wireless Web applications, said Paula Arcioni, identity management services manager for the state of New Jersey in Trenton.

MCI's offering of a managed PKI-based authentication service is "very interesting," she said. The state government is using a VeriSign-enabled PKI infrastructure to support several applications requiring the use of digital certificates and electronic signatures.

Prices for MCI's e-mail services range from 98 cents to $2.70 per user per month. Managed PKI starts at less than $1 and goes up to $5 per user per month. Setup charges can cost up to $100,000. **46576**

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CA's New Sales Chief Speaks Out

BY DON TENNANT

Computer Associates International Inc. last week announced that Stephen Richards, who was in charge of CA's global sales team during the period in which contracts were backdated to inflate quarterly earnings, resigned from his position as senior vice president for worldwide sales [QuickLink 46450]. Replacing Richards is **Greg Corgan**, *a 24-year IBM veteran who joined CA last year as senior vice president of North American sales. Just hours after his appointment was announced, Corgan spoke with* Computerworld *about going into the high-profile job at a turbulent time in the company's history.*

You're replacing a guy who resigned after having been in the position when the improper accounting activity took place. How difficult do you think your new job will be under the circumstances? I don't think it'll be difficult. That was four years ago. We've totally revamped the business model; we have a whole different way of recognizing revenue and accounting for what we do in our business. So that's not even an issue anymore.

What's the most frequently expressed concern you're hearing from CA's customers right now? I've got to tell you, the discussion around this [improper accounting and consequent management reshuffling] stuff from customers is negligible. Up until 10 days ago, in the year I was out here, I never heard anything. In the past 10 days, folks have asked what it's all about as more has hit the press. [They've asked,] "What's really behind the scenes? What do you think the real issues are?" So they ask about that, but they're very brief discussions.

Do you think there are any lingering pockets of the old CA mind-set in the field or the channel that you need to deal with? Well, I've been out there now for a year, and there always have been some little pockets of the old CA, more from a philosophical mind-set than anything else. I think we've managed to fairly well face-lift most of those.

For the ones that have not seen the light, what do you need to do? There aren't that many of them. Mostly it's jawboning and discussions on, "Look, we put the customer at the center of what we're trying to do. We try and adapt to the business issues and the business processes those customers are dealing with. We try and be as accommodating as possible in terms of mapping into their whole IT business. It doesn't mean it's a yes to everything, but that's the attitude.

Have you had to replace people for not seeing the light? Very rarely.

What do you think you bring from IBM that will be of greatest benefit to CA and its customers? A sense of account management; a sense of how important it is to build relationships, to understand the customer's business. And as a result of understanding that business, to bring proactive solutions to the table. [CA's] heritage has been one of being product salesmen, as opposed to trying to understand the customer's business and relate technology issues to solving those business problems.

Mark Barrenechea, CA's senior vice president for product development, told me last week that he thinks software is an "afterthought" at IBM [QuickLink 46426]. Was that your experience? What he means by that is if you look at the big pieces of the business at IBM, services is a $40 billion business; the hardware business I think is about $28 billion; and a $15 billion software business you might put in the "afterthought" category. I did tell him this: While it may be the lowest revenue component of the businesses, it contributes the most profit in that organization.

You report to Jeff Clarke, who was named chief operating officer [last week]. Do you think the fact that CA has been operating without a COO since 2000, when Sanjay Kumar became CEO, has hurt the company in any way? Not at all. IBM doesn't have a COO.

So why does CA need a COO now? Because I think with [interim CEO] Ken [Cron] coming in and he not being as familiar with the business as Sanjay was, having an operational focus as well as a strategic focus makes sense. **46517**

MORE ONLINE

To read the full interview with Corgan, visit our Web site:

QuickLink 46463
www.computerworld.com

Offshoring Foes Protest At IBM Annual Meeting

Global strategy is key, Palmisano tells shareholders

BY ELIZABETH HEICHLER
PROVIDENCE, R.I.

Sporadic chants of "Offshore the CEO!" rang out here last week as about two dozen picketers representing a group of current and former IBM employees welcomed attendees to the company's annual meeting.

Bearing signs that read "America's future is not offshore," "Retrain for what?" and "Offshore CEO Sam Palmisano," the demonstrators raised notice that the politically controversial issue of offshoring would be on the table at the meeting, where several shareholder proposals centered on employee concern with the company's labor and executive compensation practices.

Palmisano was able to launch the event at the Rhode Island Convention Center on a positive note, telling the approximately 350 attendees that the board of directors had approved a 12.5% dividend increase, to a regular quarterly cash dividend of 18 cents per common share. But Palmisano was also compelled to defend the company's strategy on outsourcing, which gained a high profile after reports surfaced that executives had discussed moving a large number of jobs out of the U.S. to countries such as India [QuickLink 45446].

Palmisano stressed the importance of IBM being a global company with very strong businesses internationally, not just in the U.S., and said it needs to "look at a global skill pool around the world." He pointed to $25 million the company has set aside for the Human Capital Alliance, a skills retraining program, although he acknowledged that the effort is just beginning.

Cultural Shift

However, it was apparent from the chairman's remarks extolling the benefits of open markets and global free trade that IBM isn't turning back from offshoring.

"Most people recognize that you can't lock down jobs, businesses and skills, and you can't lock down nations," Palmisano said. And he warned that in managing an enterprise such as IBM, there can be "no emotional attachment to the things that don't represent your future."

That lack of emotional attachment rankled some long-time IBM employees, who said they have seen a shift in the corporate culture.

Michael Saville, a former employee who spent 32 years with the company, traveled from his home in Salt Lake City to protest what he sees as a fundamental shift at IBM. The company treats its workers "like commodities, not like assets," he said. It can take 18 months to two years to retrain an IBM employee whose skill set is in very proprietary technology, he said.

LOCAL UNIONS joined IBM employees in a protest outside last week's shareholder meeting.

THE ASSOCIATED PRESS

"IBM tends to say all jobs are equal, but the new jobs available are at lower salaries and fewer benefits," Saville said.

A current IBM employee, Bill Costine, was also part of the premeeting demonstration over offshoring. Costine does AIX support at the company's Fishkill, N.Y., facility, and said he feels that his job is relatively safe for the time being because it requires face-to-face interaction with U.S.-based hardware engineers. However, the same can't be said for many other positions.

"Any help desk job, any programming job, any software design or development job, anything that doesn't involve face-to-face transactions with your customer" is vulnerable, he said. **46518**

Heichler writes for the IDG News Service.

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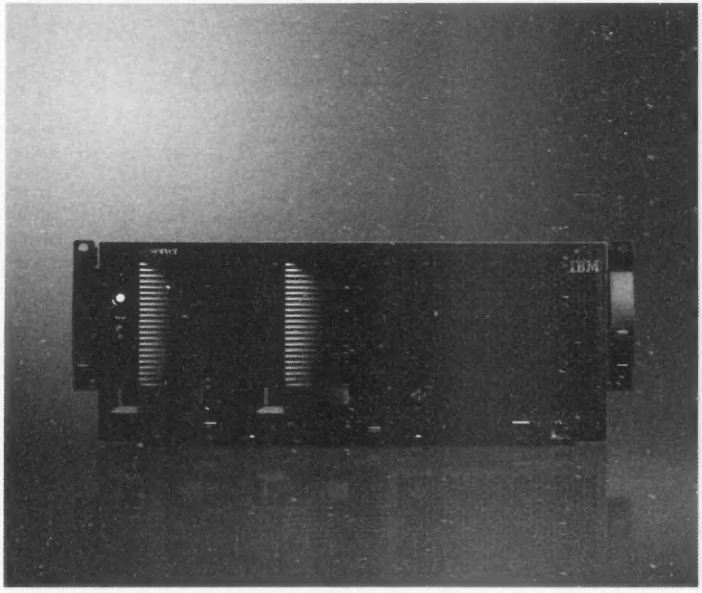

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Continued from page 1

IT Auditors

Others agreed that IT audit professionals like Carrera are in big demand as large companies race to document their internal IT and financial controls to meet the Sarbanes-Oxley compliance deadlines set by the U.S. Securities and Exchange Commission. The deadlines will begin taking effect with fiscal years that end on or after Nov. 15, so companies that report their results on a calendar-year basis will need to comply by year's end.

The so-called Big Four accounting firms can't find enough people to help their clients do the documentation work mandated by Section 404 of Sarbanes-Oxley, said Marios Damianides, international president of the Information Systems Audit and Control Association and the Information Technology Governance Institute, which are both in Rolling Meadows, Ill.

Damianides, who is also a partner in the technology and security risk services group at Ernst & Young LLP in New York, predicted that the shortage of IT auditors will become even more severe this summer, when companies begin testing their systems for Section 404 readiness in earnest.

That could pose a problem for many companies because accounting and consulting firms are actively recruiting IT auditors from the customers they're working with, said Stan Lepeak, an analyst at Meta Group Inc.

"I think a lot of IT departments are going to be late [in complying], partly because they started late but also because of competition from external auditors," he said. "Companies will face some serious resource constraints."

Lepeak and other observers said some experienced IT auditors are commanding salary increases of 25% or more from recruiters. In other cases, companies are offering only marginal salary increases but are trying to entice auditors with big sign-on bonuses.

Pam Downham, technology and risk services people leader at Ernst & Young, said her company has increased the head count in its IT risk practice by 30% over the past 10 months. It has also more than doubled the number of recruiters who are working for the group from eight to 18 since last August.

Downham, who is based in Indianapolis, added that the IT risk unit still has nearly 200 openings that it's trying to fill by June 30. "We continue to hire like crazy," she said, declining to disclose the IT group's total head count.

Unlike Y2k work, Sarbanes-Oxley compliance efforts are expected to be an ongoing exercise in which companies will have to document their internal controls on a quarterly basis and have them certified by external auditors annually.

As a result, there likely won't be a sudden drop-off in demand for auditors the way there was for Cobol programmers after Jan. 1, 2000. "There will be a bit of a bump [in demand] over the next 12 to 18 months," Lepeak said. "But you'll still need IT auditors around to address changes that occur in the business."

"A year ago, I talked to a guy who said that [Sarbanes-Oxley] would become the 'full employment act' for accountants and lawyers," said Carter Priess, CEO of Pace Solutions Inc., an IT auditing consultancy in Danvers, Ill. "My impression today is that SOX is the full employment act for IT auditors." **46577**

Continued from page 1

IBM/EMC

shots at each other, the storage rivals made dueling product announcements related to virtualization. IBM released an upgrade of its TotalStorage SAN Volume Controller software, which, like other virtualization tools, is designed to make disk arrays from different vendors look like a single pool of storage to users.

The Version 1.2 upgrade adds support for managing EMC's Symmetrix and Clariion disk arrays as well as Hitachi Data Systems Corp.'s high-end Lightning devices, IBM said. SAN Volume Controller now also supports NetWare and Windows Server 2003, plus server virtualization software from EMC subsidiary VMware Inc.

Not to be outdone, EMC said at its annual user conference in Orlando that it's developing an enterprise-class "storage router" device that will include virtualization software for pooling data on storage-area networks (SAN).

Beta testing will begin this quarter with a small number of users, but the product isn't due to ship until the first half of 2005, according to EMC.

"Clearly, EMC is late to market," said Jeff Barnett, market strategy manager at IBM's storage software group. "And your Version 1 product is never as good as your third iteration. I think we've blown them away in capability, and they will probably never catch up."

But Mark Lewis, executive vice president of open software at EMC, said during an interview at last week's user conference that his company's virtualization offering will have more-robust functionality and better scalability than existing products such as IBM's.

"We've taken a lot more time than other companies that have tried to race a product to market," Lewis said. "I'm not worried about time to market on this one."

He added that the storage virtualization market is still immature and is being hyped by other vendors.

EMC's storage router will support VMware's technology, be built around industry standards and be compatible with storage switches from Brocade Communications Systems Inc., Cisco Systems Inc. and McData Corp., Lewis said.

Russ Rosen, CIO at online furniture retailer Rooms To Go Inc. in Seffner, Fla., said he plans to install SAN Volume Controller next month to mirror data from an IBM Shark disk array in his main data center to one of IBM's FAStT midrange storage devices at a disaster recovery site.

"You actually have better performance writing transactions directly to the SVC rather than to the storage device itself," Rosen said. "We have several thousand transactions that happen in our warehouse management system, and we didn't want to lose track [of any] and have to rebuild transactions."

Rosen added that with SAN Volume Controller in place, he expects "to be able to just flip over the [frame-relay] circuits to the disaster recovery site and have it come right up."

Rick Villars, an analyst at IDC in Framingham, Mass., said he expects both IBM and EMC to aim their virtualization software at data migration uses in addition to the pooling of capacity on multivendor SANs. For example, he said, the tools could be used to move applications to backup servers while new systems are being installed. **46560**

FUTURE TECHNOLOGY

EMC execs outlined a long-term development plan that includes a common user interface for all of its software:

QuickLink 46561
www.computerworld.com

NEW PRODUCT

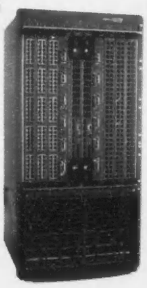
Extreme Upgrades Switch Software, Adds Scalability

ExtremeWare XOS Version 11.0

Extreme Networks Inc.

■ **PRODUCT SUMMARY:** Santa Clara, Calif.-based Extreme today plans to announce the latest version of the operating system for its switches. Extreme said the upgrade is more scalable than the current Version 10.1, and it supports open application programming interfaces and XML-based data, as well as virtualized switching and routing. The new release will also run on PC-based softswitches from Extreme and other vendors. In addition, it offers improved protection against denial-of-service attacks.

■ **USER EXPERIENCE:** Over the next two weeks, Sun Microsystems Inc. plans to install Extreme's BlackDiamond 10K core network switches with the latest operating system release in its Santa Clara data center, which runs load and performance tests involving thousands of Sun servers. Version 11.0 looks to be resilient enough to give technicians the ability to reload software test modules without any system downtime, said Dean Nelson, a test lab manager at Sun. "We're an Extreme and Cisco house, but what I needed with the new Extreme OS was scalability and expandability and performance," Nelson said.



■ **ANALYST ASSESSMENT:** The biggest value of ExtremeWare 11.0 isn't new functionality but the fact that Extreme is building a flexible operating system that will let development partners easily build applications in areas such as voice over IP and intrusion detection, said IDC analyst Abner Germanow.

■ **OTHER VENDORS IN THE MARKET:** Cisco Systems Inc. and Foundry Networks Inc., among others.

■ **PRICE:** Included with Extreme's switches; the BlackDiamond 10K series starts at $100,900.

■ **AVAILABILITY:** Due for release with the BlackDiamond switches (in photo) in June and with other products later in the year. **46549**

– Matt Hamblen

BPM Moves Beyond Business Intelligence, Hyperion CEO Says

Claims user focus is shifting to apps like forecasting and financial planning

BY MARYFRAN JOHNSON
CHICAGO

Hyperion Solutions Corp. last week held its annual user conference here, its first since the Sunnyvale, Calif., company acquired query and reporting tools vendor Brio Software Inc. in October. At the conference, Hyperion CEO **Jeffrey Rodek** *spoke with* Computerworld *about developments in the market for decision-support software, such as business intelligence and business performance management tools.*

When it comes to using business intelligence or BPM tools across a corporate enterprise, what kind of impact are you seeing on the relationship between the CIO and the CFO? Today, these larger enterprise systems — whether it's our Essbase or a large [financial] consolidation system — are often IT's way into the business. So IT is part of the evaluation, part of the solution and ends up partnering with the CFOs. The CFOs realize that if they're going to be change agents for their companies and affect things other than just for the finance people, they need their partner, the CIO, to help them do that.

Do you think users are clear on the distinctions between BPM and business intelligence? Not yet, no. People use different terms to describe this whole area, and sometimes they say BPM, but a lot of times they don't. What they do say is, "I want more accurate data," "I want to get better insight," or "I want the ability to plan and model on the fly." All of that is business performance management. To do BPM, you need to do rolling forecasts, financial consolidation, customer and product profitability calculations. You can't just say, "[Show me] sales by customer," which is what people think of when they say BI.

All this talk lately about the tech spending upturn – are you seeing evidence of it? I think it's a little bit real. The bigger thing for us is to grab a bigger market share and not just wait around for the total IT spend to go up. There's no reason we can't get to be three times as big as we are today.

BI dashboards, or portals, are gaining momentum, but many companies struggle with the cultural issues of getting end users to actually adopt them. Do you see that with your own customers? Yes. You see it in two ways. One is in trying to wean them off that spreadsheet. They say, "Don't take away my Excel!" So with a lot of the dashboards, you make them look like Excel. The second, bigger thing is the cultural transformation. One of the presentations here at the conference, for instance, was on dashboards for the sales force. At first, when the sales force saw the dashboard, they thought it was great. Then they started realizing how the executives could look at it and see everything in their pipeline. That was a big change. **46505**

READ MORE ONLINE

For an extended version of our interview with Rodek, go to our Web site:
QuickLink 45491
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Lawson Maps Out a More User-friendly ERP Strategy

Apps vendor vows to improve software reliability, IT services

BY MARC L. SONGINI

Looking to boost its ability to compete with the major ERP vendors, Lawson Software Inc. hopes to attract new users and keep its existing ones through a renewed focus on its vertical-market strategy and increased attention to customer care.

In a phone interview from Lawson's annual user conference in Atlanta, CEO Jay Coughlan said his company "needs to break away from the peer group" of its ERP rivals. To that end, St. Paul, Minn.-based Lawson will embark on "a 1,000-day journey" to improve software stability, expand its services offerings and help users make the business process changes associated with ERP projects, Coughlan said. "We need to raise the bar dramatically," he added.

Although Coughlan offered few details, he said Lawson is looking to do things such as eliminate the need for software patches, add analytical sophistication to its suite of applications and broaden its offerings for individual industries, specifically the health care and public-sector markets.

Coughlan's message hit home with users such as Barry Bonds, vice president and applications manager at Northern Trust Corp. in Chicago. The financial services firm runs a heavily customized version of Lawson Financials 8.02 on Sun Microsystems hardware with an Oracle9i database, and Bonds said Northern Trust's IT staffers would like application upgrades to be more streamlined.

The company's IT team has had to deal with "an overwhelming amount of documentation" during upgrades — sometimes as much as 600 pages of information, Bonds said from Lawson's Conference and User Exchange 2004 event.

In addition, because of Northern Trust's customizations, patches can require extensive testing to ensure that there are no glitches. Bonds said Lawson's announcement made him "cautiously optimistic" that future upgrades will be more automated "so I don't have to wade through all that."

Lawson's increased focus on quality could also help free up IT resources, said Robert Smith, software administrator at the Harford County Public Schools in Bel Air, Md. "It sounds like a cliché, but we're always doing more with less people," Smith said.

Last November, the Harford schools completed an upgrade from Version 7 of Lawson's ERP suite to Version 8.03. Noting that some patches can create problems with other parts of the applications when they're installed, Smith said the school system had to set up a separate test environment to check the potential effects of patches and make sure that all critical functions still worked properly — something he considers "unreasonable." **46516**

CEO Looks to Do Away With Patches

Jay Coughlan, *Lawson's president and CEO, spoke with* Computerworld *from the vendor's user conference. Excerpts follow:*

Can you give concrete examples of what's coming as part of the plan you announced at the conference? Out of the chute, we had a quality product in Lawson 8.1. Going forward, we need better quality. We need to change the way customers do patches. We'll start with the fact that they should not have to do patches. Patches are no-value-added work. Our goal is to eliminate that in less than 1,000 days.

How do you stand in the market against giants such as Oracle and SAP? Big doesn't necessarily mean better. There's no incentive for Oracle or SAP to change the game. They are the game. What incentive do they have to raise their standards?

– Marc L. Songini

FULL COVERAGE ONLINE

For an extended version of this interview, go to:
QuickLink 46486
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Dillard's department stores hire over 10,000 people a year. Storing and retrieving application, training and benefits packets had become costly. So Dillard's bought into something smart: a Xerox Office Document Assessment (ODA).

Xerox examined their work process across all 14 Dillard's business units and recommended key improvements.

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MARYFRAN JOHNSON

Spyware Wake-up Call

LIKE MOST OBLIVIOUS USERS, I've never given much thought to spyware. I've always shrugged it off as just another slimy advertising gimmick in an online world chock-full of them. But as any security expert will tell you, anybody who surfs the Net has spyware on his machine.

MARYFRAN JOHNSON is editor in chief of Computerworld. You can contact her at maryfran_johnson@computerworld.com.

Whatever you call it — adware, sneakware or snoopware — spyware is a catch-all term for any hidden software program that surreptitiously monitors your Web activities or gathers data without your knowledge. At its most harmless, spyware tracks your Web shopping pathways and gives marketers new numbers to crunch. At its most toxic, it may be monitoring your keystrokes, installing programs, scanning files or even turning on a webcam to secretly film you.

Yet, until recently, spyware has been seen as mainly a consumer, home-user concern — a perpetual hot button among privacy advocates, but hardly a significant corporate IT security risk. That view is changing, however, and once you read Robert L. Mitchell's "Spyware Sneaks Into the Office" (page 23, and online at QuickLink 45702), you'll see why. The story makes a strong case for paying attention to this menacing but silent invader of corporate networks.

What kind of menace are we talking about? For starters, spyware is doing the following:

■ **Interfering with regulatory compliance efforts.** Companies must comply with a complex legal web of privacy regulations and data protection mandates today. When spyware is loose in your environment, you can no longer guarantee that corporate information is secure. Unauthorized, untested software on corporate laptops basically blows a hole in your carefully crafted security policies.

■ **Generating even more spam.** When spyware finds e-mail addresses, it obligingly sends them back out over the Internet to be traded, shared or sold to spammers. Users clueless enough to click on product ads within the spam may be downloading additional spyware.

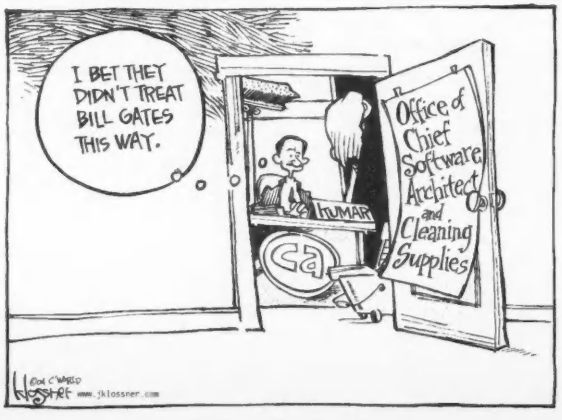
■ **Devouring network resources.** One LAN administrator quoted in our story discovered multiple spyware programs running on 200 desktop PCs when he investigated complaints about lousy network performance and proliferating pop-up ads. When his ever-helpful users tried to block the pop-ups by downloading freeware to do the job, even more spyware rode in with the free software.

Ah, freeware. Or not-so-free ware, as it turns out. Bundling in adware programs is all part and parcel of the way distributors make money on freeware [QuickLink 46458]. Exhibit A is the wildly popular Kazaa Media Desktop, a kitchen-sink collection of peer-to-peer file sharing services that also delivers multiple adware programs (and much worse). If downloading freeware isn't already outlawed in your company, it should be.

Which brings us to the human element in this: the already-overworked IT staffs, and their managers, who don't think it's that big of a deal.

"There's not enough senior management buy-in to the problem," says one security manager at a financial services company. "Our hands are full just handling the antivirus stuff." Yet the antivirus vendors have to tread lightly when it comes to blocking advertisements because of lawsuit threats from the ad vendors. Legislation is even less likely to help, though many will be watching the impact of Utah's controversial Spyware Control Act, which goes into effect today.

In the meantime, our story has plenty of advice about how to eradicate spyware, and much of it dovetails with good security practices. Maybe users like me can afford to remain oblivious, but IT managers can't. It's time to answer the spyware wake-up call. **46539**



PIMM FOX

Google Me This

WHEN mixed with money, IT is a drug. The combo makes ordinarily sane people forget their past. The toxic cocktail unleashes a tidal wave that washes away all common sense.

Think I'm kidding?

Just check out the giddy display of amnesia sweeping the investment community over the initial public offering of Mountain View, Calif.-based search engine company Google.

Remember, we're not talking jet engines here. Jet engines are almost worthless compared with the expected $25 billion valuation for Google. At that price, Google is worth more than Lockheed Martin. That quaint maker of flying machines produced revenue of $31.8 billion last year, selling such things as F-16 fighter jets and gearing up for the new Joint Strike Fighter program. Lockheed Martin may have 130,000 employees, but its $20.8 billion market cap is only on paper.

PIMM FOX is a London-based journalist. Contact him at pimmfox@pacbell.net.

Speaking of paper, Google is likely to be worth more than International Paper, which has a stock market valuation of $20.9 billion. But then, who wants to own all those dirty factories filled with employees when you can be sitting in a nice, clean office sipping coffee? Unfortunately, that won't do either, since Google is worth more than all of Starbucks' lattes and aged Sumatra coffees. The king of caffeine might operate more than 7,500 retail stores, but it's valued at just $15.5 billion.

Of course, none of this bothers Credit Suisse First Boston or Morgan Stanley, the lead underwriters that will be selling the Google swill to a willing public. The investment bankers stand to make about $100 million flogging a company whose main product is widely used and often imitated. No, it shouldn't bother them, but it should bother those who throw around terms such as *value*.

In a wider sense, it isn't hard to place Google alongside Netscape, the

leader of last century's Internet hype. Nor is it difficult to connect Google with its bankers, Credit Suisse First Boston, whose former wunderkind, Frank Quattrone, now sits in the dock, charged with obstruction of justice in relation to IPO abuses.

But that's all in the past, right?

People have recovered from their hangovers from tech excess. If they can afford Google, they can surely buy lots of Alka-Seltzer. Bayer, the German maker of Alka-Seltzer, is inexpensive alongside Google, with just $18 billion in market value.

If this argument sounds old fashioned in its failure to take into account the newer New Economy, well I guess it is. Google could well find its place in the ranks alongside eBay and Yahoo, the only Internet companies with larger market caps ($53 billion and $37.8 billion, respectively) than the one expected for Google. But you can forget about comparing Google's eventual stock market capitalization with AOL's. Time Warner dropped AOL from its name several months ago because it wasn't adding value to the company.

You might want to remember that piece of news when they hand out the Internet drugs this time. **46444**

DAVID MOSCHELLA

Corporate Innovation And the CIO

LIKE CLOCKWORK, almost exactly four years after the bursting of the Internet bubble in March 2000, the pendulum has begun to swing back toward IT innovation and progress. While boardroom skepticism clearly remains, the limits of negativism have been reached, and companies are increasingly looking once again at top-line growth. Assuming that war and terrorism don't shatter the current recovery, we can be reasonably confident that the voice of technology will again be heard.

Although IT spending and IT innovation aren't the same thing, they clearly have a strong correlation, and there has rarely been significant IT innovation without additional spending — even if the converse isn't necessarily true. Despite the bruises of recent years, most companies know that in order to grow, at some point they must start doing some things differently. And it's increasingly true that there are few major business changes or innovations that don't have a significant IT component.

DAVID MOSCHELLA is global research director at CSC Research & Advisory Services, a Computer Sciences Corp. company. Contact him at dmoschella@earthlink.net.

For these reasons, the CIO should typically be at the heart of corporate innovation. But is this the case in your organization? In recent years, many IT organizations have lost their image as business innovators, and in many companies, the internal IT systems and infrastructure are seen as barriers to innovation, not enablers. The fact that so many companies have chosen CIOs whose primary background is outside of IT can only be seen as a serious indictment of the IT profession and as clear evidence that too many IT professionals have failed to gain the respect of their business colleagues.

Will things be any different this time around? All of our experience suggests that the IT business tends to evolve in cycles and that each of these cycles has its defining themes and dynamics. We know we've been through the bubble and postbubble eras, but how will the next three to four years be characterized? Some people are calling this period "the new normal," but clearly the future will be more specific than that.

From an IT management perspective, the next few years will be the formative period for establishing the long-term relationship between IT and business innovation. If corporate IT doesn't emerge as a true business peer and partner, it probably never will, and many IT organizations will lose control of emerging applications and be relegated to support activities. This will make them far more likely to be the subjects of outsourcing or similar rearrangements.

As we enter this new, seemingly more positive phase, actual and would-be IT leaders might want to continually ask themselves the following basic questions:

- Does your company have a specific and widely understood business-innovation strategy?
- How does IT fit into this strategy?
- Does your IT organization have a culture that supports and rewards business collaboration and innovation?
- Do your customers and suppliers play an important role in any such processes?
- Does your company's executive team look to IT management as a major resource for potential ideas?

If your answers to these questions are mostly positive, congratulations. If not, some sort of remedial action is probably recommended. IT management now has the opportunity to repair much of the damage of recent years. How well it responds will likely have significant ramifications for many years to come. **46393**

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READERS' LETTERS

Want Fixes or Not?

WE IT FOLKS ARE FICKLE. Just a year ago or so, we were complaining that Microsoft wasn't treating security issues seriously. Now that Microsoft's being serious, releasing patches as soon as it can, are we complaining that it's *too* serious ["Microsoft Draws User Ire With Its Latest Release of Patches," QuickLink 46247]?

I like the idea that Microsoft is issuing patches with such effort and frequency regardless of timing and potential damage to its reputation. I just hope it can keep this up and doesn't give in to the complainers. Sure, these patches are evidence of holes due to products sometimes being rushed to market, sloppy coding and testing, or whatever. But the fact is that Microsoft is plugging the holes, and its willingness to do what's right has a lot more merit in my eyes.

I do have one suggestion for Microsoft regarding these patches, though: How about providing an easy-to-use tool for organizing and deploying them?

Dave Shipman
IT manager, Concord, Mass.

ACCORDING to Microsoft's Stephen Toulouse, issuing the 20 patches "was the best solution for our customers." Wrong! The best solution for your customers, Mr. Toulouse, is to drop Microsoft and go with an alternative server operating system that was built from the ground up to handle the Internet and security.

Jerry Walter
Troy, Ohio

CONSUMERS should never be alerted to download fixes that haven't been made available. Getting them to check Windows Update once is hard enough. Try getting them to go back repeatedly for the same issues. Yet Microsoft points fingers at consumers who are too "lazy" to keep their systems current. Hmm.

Jim Musslewhite
Consultant, Olympia, Wash.

IT SEEMS TO ME the complainers have nothing to complain about. If the software code is defective, it will need to be patched. You can either keep current with the patches or keep busy repairing damage that the lack of patches creates, and then install the patches anyway. The Internet and IP weren't made for user security, durability and privacy, and it may be a decade or more before we get to some level of user needs. Put your time and energy into keeping current with the patches; this is the cheapest way out until software and the IP improves.

Gene Thomas
Senior consultant, Telecom Consult, Atlanta, genethomas@att.net

Wi-Fi Overload

OH BOY, yet another "national" Wi-Fi network ["McDonald's to Supersize Use of Wi-Fi Connections," QuickLink 46251]. So, let's see. If I want an espresso and some Web surfing, I'll go to Starbucks and sign up for T-Mobile HotSpot. When I need some magazines and have to check my e-mail, it's off to Barnes & Noble, where I must sign up for Cometa Hotspot. All this signing up makes me hungry, so I stop at McDonald's, but I have to sign up for Wayport if I want Wi-Fi there. (And I guess my Cometa Hotspot that was usable at McDonald's in Washington will no longer work there.)

As a consumer, I'll pick one plan (Cometa seems the most affordable right now in Seattle), patronize those retailers where I can use it, avoid those with competing systems because there are too many Wi-Fi hands trying to get into my wallet, and look for those independent retailers that offer free Wi-Fi as a service to their customers.

Retailers take note: You'll likely build more business traffic by not fragmenting the Wi-Fi market. Take a lesson from Visa and MasterCard vs. store-branded credit cards.

John Driggers
Seattle, john_driggers@hotmail.com

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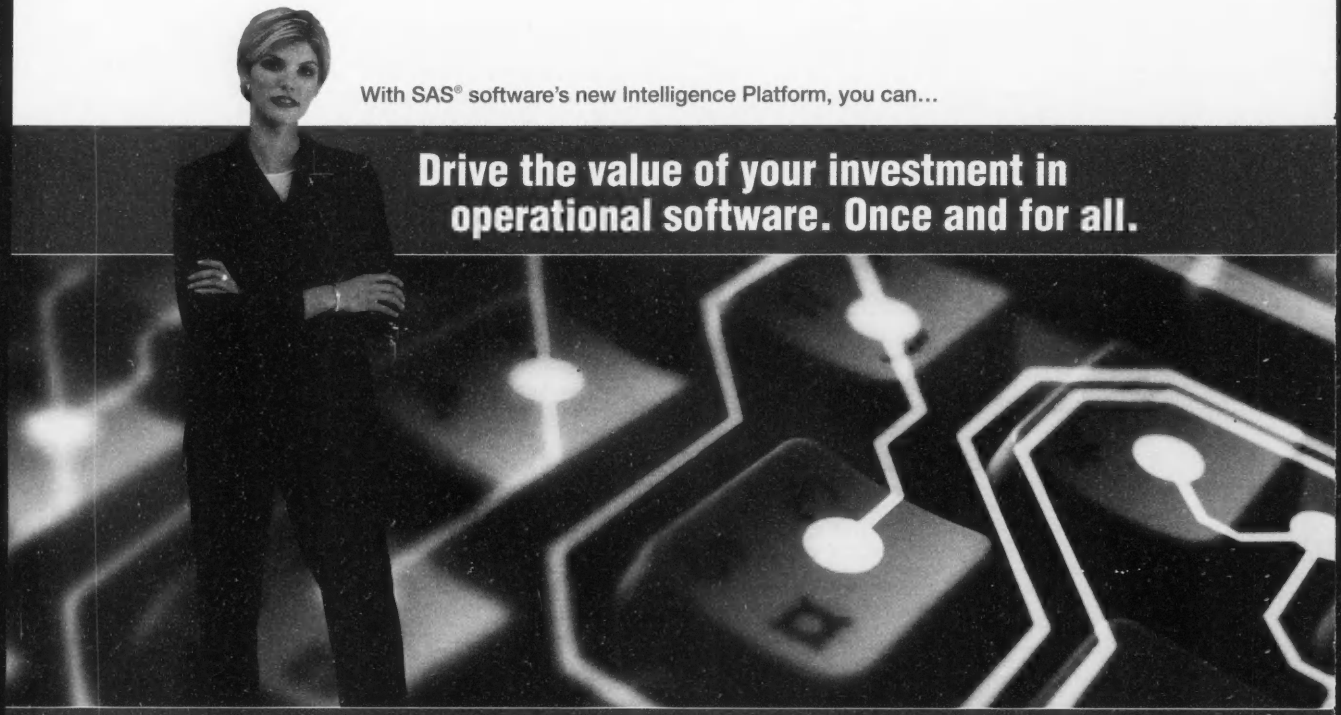

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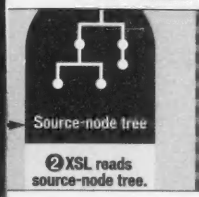


QUICKSTUDY
XSL
Extensible Stylesheet Language is a family of languages and specifications designed for laying out and presenting XML documents and data. **Page 28**

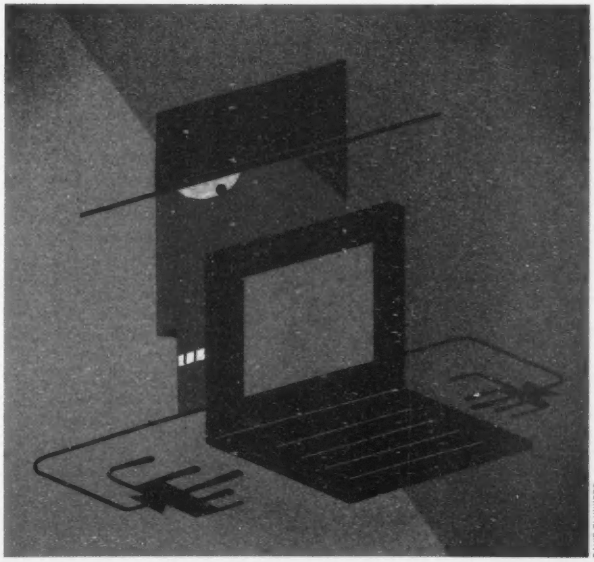
SECURITY MANAGER'S JOURNAL
Back Door Puts Vendor on Hot Seat
News reports that a vendor's products have built-in security vulnerabilities spur Vince Tuesday and his staff to ask tough questions when they meet with the vendor's reps. **Page 30**

OPINION
The Cost of Short-Term CIOs
Paul A. Strassmann says that the brief average tenures of CIOs limit accountability and long-term strategizing. **Page 32**

Spyware Sneaks

INTO THE OFFICE

Once viewed as simply a consumer desktop problem, spyware is increasingly viewed as a corporate liability that IT has to address. **BY ROBERT L. MITCHELL**



DAVID PLUNKERT

BRUCE EDWARDS began to understand that spyware was more than a consumer PC problem when his users started complaining loudly about poor performance and an increase in pop-up ads. But it wasn't until after he'd checked all of his organization's PCs that Edwards understood the full scope of the problem.

"My customer workstations were really gummed up," says Edwards, LAN administrator at the Administrative Office of the Courts in Little Rock, Ark. All 200 machines in his offices were running a wide range of spyware, and many were running multiple programs. The programs ran in the background without the users' knowledge, downloading information on Web surfing activities and uploading advertising in the background for use in pop-up ads. As the volume of these hidden programs grew, they began using up system resources and choking off network bandwidth. Annoyed with all the pop-up ads, some users downloaded free pop-up blocker programs that installed even more spyware.

Spyware programs discreetly install themselves on PCs, establish a back channel over which to download information about the user and typically upload advertisements — often over HTTP Port 80. Programs designed specifically to deliver targeted advertising are also called adware. But adware and other types of software that install without the user's explicit consent and establish background communications — including surveillance programs, key loggers, remote control tools and Trojans — are also described as spyware.

Companies have traditionally viewed spyware as a nuisance that's best handled by desktop support groups. But IT organizations are beginning to view it as a security risk as well because spyware is becoming more common and the programs are growing more sophisticated.

Edwards used PestPatrol, a spyware scanning and removal tool, to clean up the mess. But the big issue for him isn't system performance or productivity-sapping pop-ups — it's the uneasy feeling that these programs have opened an unauthorized communication channel that could put sensitive court documents at risk. He worries that, in addition to downloading data on Web surfing activity, a spyware program may capture user log-in and password information, or that a benign adware program may provide a communications pathway that could be hijacked for uploading more malicious software.

Analysts say that while some adware programs simply monitor Web surfing activity and serve up annoying pop-up ads, others could be stealing e-mail addresses and passwords, allowing background downloads of more malicious software, or sending sensitive data to competitors. "We think the capability to do that is there," says John Pescatore, an analyst at Stamford, Conn.-based Gartner Inc.

Getting In

Spyware applications may install themselves after a user clicks on a pop-up dialog box, opens an e-mail attachment or downloads freeware. In some cases, unpatched Windows machines may be vulnerable to "drive-by" attacks, in which malicious code embedded in a viewed Web site exploits Internet Explorer vulnerabilities and lax security settings to install itself without the user clicking on anything.

As spyware accumulates, it con-

sumes increasing amounts of resources. A single program may install upward of 300 files and make 500 registry entries, says Roger Thompson, vice president of development at PestPatrol Inc. in Carlisle, Pa.

Spyware programs may also be used in corporate espionage. Thor Larholm, senior security researcher at network security tool vendor PivX Solutions LLC in Newport Beach, Calif., says a hacker stole one company's trade secrets by using an adware program's communications channel to plant a Trojan on corporate desktops.

The adware was set up to communicate with the adware producer's Web page in order to retrieve new advertisements. The attacker used a "man-in-the-middle" attack to alter the Web page with malicious code that could exploit an Internet Explorer vulnerability on unpatched Windows machines.

10 TIPS TO STOP SPYWARE

1. Keep Windows and Internet Explorer patches up to date.
2. Keep desktop antivirus software signatures up to date.
3. Issue and enforce strict policies on user Web surfing and downloading activities.
4. Use a Web content filtering program to monitor user activity and block access to Web sites commonly used to disseminate spyware.
5. Install a desktop firewall on every laptop and desktop.
6. Configure an e-mail gateway to block all executable e-mail attachments.
7. Don't give Windows users local admin privileges.
8. Test Service Pack 2 for immediate deployment on all Windows XP machines.
9. Create a list of known good ActiveX controls and block all others. Lists are available from Symantec, PivX and other security vendors.
10. Use commercial antispyware software to detect and remove existing spyware programs. Look for improved tools that can identify all types of spyware, including commercial programs that include end-user licensing agreements. Expect to see antispyware programs with centralized management and control features by year's end.

Because the target company's PCs were vulnerable, the attacker was able to install the backdoor program. "By hijacking the adware traffic, he gained access to five machines," Larholm says. The attacker spent two months collecting trade information and data on new projects before the hole was detected and closed. The lesson, Larholm says: "Any kind of unknown code running on desktops is a liability."

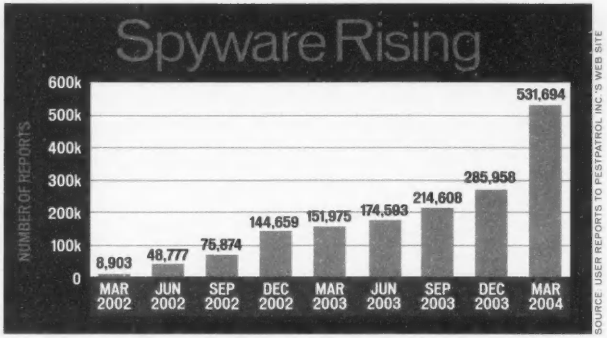
Reports of such nightmare scenarios are rare, but they worry Sean, a security engineer at a large financial services company who asked that his full name and company not be used. "I don't think we deal with [spyware] the way we should. I think it's going to get worse," he says. A disruption in day-to-day workflows caused by spyware "could translate into big bucks" for his company, he adds. But until a major incident occurs, Sean doubts his organization will act. "There's not enough senior management buy-in to the problem. Our hands are full just handling the antivirus stuff," he says.

Preventive Measures

Keeping spyware out isn't easy, users and vendors say. Antivirus software and Web content filters can help. But preventing spyware problems also requires installation of desktop firewall software on every Windows machine to detect and block attempts to install spyware, whether by the user or through the social engineering tricks spyware creators play to get users to click on a misleadingly worded pop-up window. It requires rigorous patching and updating of Windows and Internet Explorer vulnerabilities. And it requires the blocking of all executable e-mail file attachments.

Another way to thwart spyware downloads is by giving Windows XP users restricted access rather than full administrator access to their local machines. "Linux users would never run the computer as root and read e-mail . . . but that's what Windows users do all the time," says Mikko Hypponoen, antivirus research director at San Jose-based F-Secure Inc. Many spyware programs simply can't install if the user doesn't have local admin rights.

"In talking with large companies on a weekly basis . . . I'm surprised how many still provide users with full admin privileges on the desktop," says Candace Worley, product manager for McAfee VirusScan. Sean, at the financial services company, acknowledges that many of the more than 100,000 employees in his organization have full admin rights to their machines. But, he says, "it's not practical to lock down the desktop completely," because users demand some flexibility.



Patching is critical, but it won't block all exploits, says Larholm, who until recently provided a list of unpatched Internet Explorer vulnerabilities on the PivX Web site. That list once had 32 entries. "Today I would estimate that there are still 14 unpatched vulnerabilities. About half of those allow for command execution. About half of the remaining ones allow cross-domain scripting," says Larholm. Microsoft Corp.'s upcoming Service Pack 2 will remedy many of those, he says.

SP2 is expected to create application compatibility issues, but Gartner's Pescatore recommends implementing it as soon as possible. "We'll see a pretty high incidence of breakage, but it's one you should be doing," he says.

Still, SP2 won't help Sean's company. It's still using Version 5.5. of Internet Explorer, he says, noting that many large corporations aren't using the most up-to-date versions of their Web browsers "because newer versions can break intranet applications."

Pete Simpson, ThreatLab manager at Reading, England-based Clearswift Ltd., which sells Web and e-mail content filters, says blocking all executable file attachments is critical because antivirus software doesn't always detect embedded spyware.

Pete Munro, network manager at a U.K.-based vertical-market software vendor, once intercepted an e-mail file attachment purporting to be a wedding invitation. If executed, the attachment would have installed a copy of iSpyNow, a commercial surveillance spyware program. Says Munro, who asked that his company not be named, "Our source code is very valuable. If anyone stole it, changed it or deleted it, that could cause us a lot of trouble."

Munro blocked the attachment at the e-mail gateway. Users are also protected by not having local admin privileges on their machines. Munro says he's glad the gateway did its job because his antivirus scanner ignored the attachment. "From their point of view it's a commercial program," he says.

Such programs are clearly a threat, yet most antivirus tools and even some antispyware programs don't detect commercial software and adware that include end-user license agreements.

"Vendors producing different types of advertisement software are threatening to sue us because we're making them look bad," says Hypponoen. To avoid such issues, he says his company provides signatures only for malicious programs used for "criminal intent." Both Network Associates Inc. and Symantec Corp. have begun to add some spyware-detection capabilities to their corporate offerings, but both struggle with the same issues. "The Symantecs and McAfees have been very slow to add spyware capabilities, and it's not clear to me why — because it's a big problem," says Pescatore.

Ultimately, IT organizations don't care whether spyware programs are legitimate adware, commercial surveillance programs or malware. They need to know about anything that's not part of the standard system. "If you have tons of spyware on your machines, you're letting other companies use your private property to earn money. That's a big corporate liability," says Larholm. "If anyone should be monitoring your employees it, should be you." **45702**

MORE ABOUT SPYWARE

Legislators take notice of the rising tide of spyware: **QuickLink 45772**

Embedded spyware is often the price users pay for freeware: **QuickLink 46458**

Enteprise-grade antispyware programs are still a work in progress:

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8:45am to 9:15am	**User Case Study**
9:15am to 9:45am	**Business Intelligence in Action at NASD** Martin Colburn, EVP and CTO, National Association of Securities Dealers
9:45am to 10:15am	Refreshment and Networking Break
10:15am to 10:45am	**Evolving the Enterprise: Leveraging Information for Competitive Gain** Jim Davis, SVP, SAS
10:45am to 11:15am	**Industry Analyst Perspective:** **The IT Bottom Line: Proving the Value Delivered** Rebecca Wettemann, VP, Research, Nucleus Research
11:15am to noon	**Panel Discussion:** **Creating the Transparent Organization: New Roles for Business Intelligence with Corporate Customers, Suppliers and Government Regulators** Moderator: Julia King, National Correspondent, Computerworld Panelists: Dennis Callahan, EVP & CIO, Guardian Life Insurance; Ron Miller, Senior Manager, Intel Corporation; Robert Dutile, EVP, Key Technology Services, KeyCorp
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8:45am to 9:15am	**User Case Study**
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11:15am to noon	**Panel Discussion:** **Creating the Transparent Organization: New Roles for Business Intelligence with Corporate Customers, Suppliers and Government Regulators** Moderator: Julia King, National Correspondent, Computerworld Panelists: Bill Farrow, CIO and EVP, Chicago Board of Trade; Richard Gius, SVP of IT, Medical Products and Services, Cardinal Health; Scott Hicar, CIO and VP, Worldwide Information Technology, Maxtor Corporation; Shelley McIntyre, VP of Business Technology Services, The Guardian Life Insurance Company of America
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Jim Davis
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William Farrow
CIO and EVP
Chicago Board of Trade

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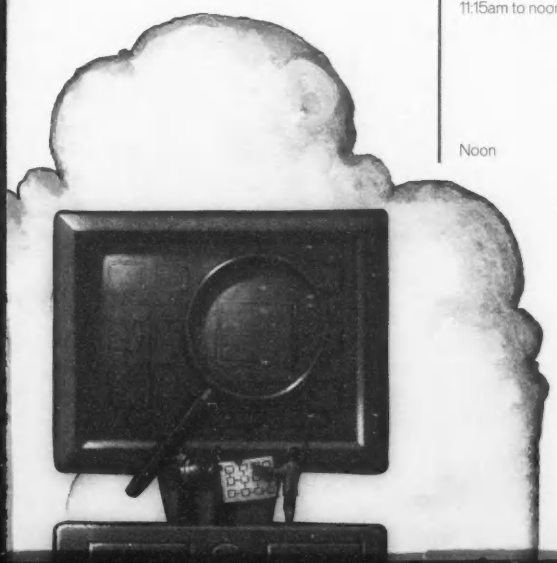

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NAVIGATING THE WLAN WATERS

Continually changing products and standards are adding confusion to the process of choosing wireless LAN products.

By Laura Gibbons Paul

KEEPING UP with new developments in wireless LAN technology is getting tougher. The Institute of Electrical and Electronics Engineers Inc. seems to ratify a new and improved variation of its 802.11 WLAN standard every few months. Meanwhile, vendors announce round after round of products touting the latest enhancements — sometimes even before the new standards are final. For IT managers looking to build anew or upgrade an existing WLAN, keeping abreast of the choices isn't easy.

"It's a lot of work to keep up," says Carl Whitman, executive director of e-operations at American University in Washington. Last year, Whitman finished a 13-month WLAN implementation based on 11Mbit/sec. 802.11b technology. Now he's considering converting the radios in some of his Cisco Aironet 1200 series access points (AP) to the 54Mbit/sec. 802.11g standard to boost throughput. But Whitman is taking his time sifting through the array of choices that have appeared on the scene since he first considered WLANs three years ago.

"New features and functions are coming at a staggering rate," says Ron Seide, product line manager for the WLAN networking business unit at Cisco Systems Inc. The good news is that Cisco and other vendors of enterprise-grade WLAN equipment are designing products that often can be upgraded with flash updates or add-in modules. "With software upgrades, you can push the configuration file change out to your access points without having to touch them again," Seide says.

Changing Channels

Vendors also offer hardware updates. For example, users of Cisco's 802.11b APs can convert to 802.11g with a $149 swap-out of the unit's internal radio hardware. Customers can upgrade units to 802.11a for $500. Cisco also offers Aironet client adapters that can run in 802.11a, b and g modes.

Ultimately, the ideal Wi-Fi architecture will be multiband, supporting both 802.11b and g (which operate at 2.4 GHz over three channels) and 802.11a (which operates at 5 GHz on up to 24 channels). Although 802.11a isn't backward-compatible with 802.11b clients, in the long term many organizations will need the extra channels available in 802.11a to support more users at a higher data rate.

But networks are still likely to continue to support devices operating in both frequency ranges. "It's not a 2.4 GHz vs. 5 GHz battle. It will be both, like an AM/FM radio," says Leigh Chinitz, chief technical adviser at Proxim Corp., a WLAN equipment vendor in Sunnyvale, Calif. "You will have b and g and a running, and it will be invisible to users."

A mixed 802.11b/g/a architecture may be the wave of the future, but not all product offerings are there yet. The current generation of wireless IP telephones, for example, supports only 802.11b. In the meantime, for many early adopters struggling to get a handle on all the changes, 802.11b works just fine.

Going With Plan B

At Scripps Health, a not-for-profit health care provider in San Diego, an 802.11b WLAN suits the needs of doctors, nurses, administrative staffers and patients just fine. "I don't know why we would migrate yet," says CIO Jean Balgrosky. Scripps is just finishing outfitting its five hospitals with WLANs — a project that cost $30,000 to $100,000 per facility and included buying laptops, Aironet 1230 APs and a gateway to the wired network. Next on Balgrosky's agenda are Scripps' 12 community clinics. The ambitious WLAN implementation, which will also use 802.11b hardware, will be complete in August 2005.

802.11b throughput and reliability are sufficient to meet the needs of the various user groups, including nurses who have Wi-Fi-enabled laptops on carts that they roll from patient to patient, doctors who log in from home using their personal wireless devices and patients who surf the Web from their beds, according to Balgrosky. Although 802.11g APs don't cost any more than 802.11b APs, Balgrosky says she will stick with the latter so as not to add complexity to the network. It has sufficient bandwidth even for downloading compressed X-ray images, and she is loath to disturb the reliability and performance of the 802.11b-based architecture Scripps has been rolling out.

As WLAN security continues to advance, Balgrosky has kept up by adding a WLAN gateway. But she is wary of proprietary implementations that could lock her into a single vendor's products. So while Scripps uses WLAN equipment from Cisco, it has a wireless gateway from another vendor, Burlington, Mass.-based Bluesocket Inc. The gateway sits between the wired and wireless networks, providing authentication, encryption and role-based access to applications. "It gives us a lot of flexibility and doesn't lock us into one architecture or vendor as far as access points or wireless cards," Balgrosky says.

Picking standards-based technology is the key to her future-proofing strategy. "You can't know everything before you make a move. You have to be able to skate to where the puck is going," Balgrosky says. "We can shift without too much effort, once the bugs [associated with the latest standards] are worked out."

Because vendors like Cisco and Proxim build a level of backward compatibility into their hardware, upgrading from 802.11b to 802.11g doesn't generally require outside help. "It is relatively simple to upgrade, provided there is adequate documentation of what is deployed," says Tom Hagin, vice president of sales at NetXperts Inc., a WLAN systems integrator in San Ramon, Calif.

But there is one caveat for migrations to 802.11g.

COMING ATTRACTIONS: Emerging WLAN Standards

802.11e Due to be ratified by the IEEE in June, the 802.11e **QoS** specification is designed to guarantee the quality of voice and video traffic. It will be particularly important for companies interested in using Wi-Fi phones.

802.11i Also called **Wi-Fi Protected Access 2 (WPA 2)**, 802.11i is expected to be ratified in June. WPA 2 supports the 128-bit Advanced Encryption Standard, along with 802.1x authentication and key management features.

802.11k Due for ratification sometime next year, the 802.11k **Radio Resource Management** standard will provide measurement information for access points and switches to make WLANs run more efficiently. It may, for example, better distribute traffic loads across access points or allow dynamic adjustments of transmission power to minimize interference.

802.11n **The Standard for Enhancements for Higher Throughput** is designed to raise the effective WLAN throughput to 100Mbit/sec. But the group handling this task is still in the very early stages of its work.

While the real-world performance of upgraded WLANs can average about 25Mbit/sec. when all clients run 802.11g, the performance of the entire network drops to 802.11b levels of 5M to 6Mbit/sec. when any 802.11b client device logs on. "When operating in mixed mode, there is a throughput hit associated with that backward compatibility," says Cisco's Seide. This can come as an unwelcome surprise if planners haven't anticipated it.

Sorting Out the Options

Beyond simple upgrade issues, many companies need help sorting through WLAN architecture alternatives. "We get a lot of calls to help people understand the ramifications of their choices," says Hagin. Security is always an important consideration, and most companies want a flexible architecture that will give them the option to run voice as well as data over the WLAN.

Voice over WLANs is a hot topic, especially in industries like health care, academia, public transit and manufacturing, which have been on the forefront of WLANs. Running wireless IP phones over a WLAN can reduce phone bills, especially for operational and building maintenance personnel who tend to be heavy users of cell phones or walkie-talkies.

At the other end of the spectrum, businesses in other industries, such as financial services, are only starting to investigate wireless. Only about 35% of Fortune 1,000 companies have deployed WLANs, says Stephen Elliot, an analyst at market research firm IDC. Most of those companies have finished wireless pilots and are pondering whether — and how — to wade in.

Companies with a blank WLAN slate want to pick network hardware that will be secure, easy to manage and able to evolve with future developments. For example, all new equipment should have a migration path for supporting the 802.11e quality-of-service standards (which should be finalized later this year) for future voice-over-IP applications.

Whether an organization is upgrading or starting from scratch, all decisions should flow from what will run on the WLAN. "Are you looking at a true multiservice wireless network that could include voice, data and possibly video? Who needs access? It all goes back to what applications you will be running," says Hagin. Integrators will conduct such assessments for a fee. For example, NetXperts typically charges between $1,600 and $60,000 for a comprehensive site survey. As part of the process, technicians set up a temporary wireless network and record room sizes and monitor signal strength while polling users to determine their bandwidth needs.

Companies also need to examine WLAN usage trends and security policies and procedures. And budget prioritization is a critical piece of any WLAN project. "You only have so much money that you can spend. You have to deploy certain areas before others, and there are political issues with that," says Todd Krupa, communications officer for information and access technology services at the University of Missouri-Columbia.

The university has an 802.11b network and uses Wavelink Mobile Manager from Wavelink Corp. in Kirkland, Wash., for centralized WLAN management. Krupa plans to upgrade 50 buildings to 802.11a in the next 12 to 18 months while continuing to run 802.11b in others. He doesn't expect the transition process to be a big deal for users, since students tend to arrive each year with the latest technology. "In 18 months, it is very likely they will have a/b/g notebooks, especially since those are already on the market now," he says.

Far bigger than the technology choices, Krupa believes, are the nontechnical issues. For example, since he's in a university setting, he can't control use the way a business might. "Those have to be campus-wide decisions," Krupa says. He recommends having a wireless communications plan to convey usage and security policies and manage performance expectations.

IDC's Elliot agrees. "You need to do a deeper analysis of what this technology can bring. It's not always going to be positive," he says. "Those who don't get access — or don't get it first — are not going to be happy." **46174**

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WIRELESS SECURITY WOES

Vendor squabbles are creating confusion around the adoption of WPA 2, the emerging 802.11i standard for Wi-Fi security.

QuickLink 46173
www.computerworld.com

XSL

QUICK STUDY

DEFINITION

Extensible Stylesheet Language (XSL) is a family of languages and specifications designed for laying out and presenting XML documents and data in specified formats appropriate for the final output medium or device.

BY RUSSELL KAY

MARKUP languages have been around since 1969, when three IBM researchers created the Generalized Markup Language. That was the grandfather of Hypertext Markup Language (HTML), which makes the Web work, and of Extensible Markup Language (XML), which has become the primary means of defining, storing and formatting data in a multitude of areas, including documents, forms and databases.

At the heart of these languages is a system called tagging, where text or data is marked by indicators enclosed in angled brackets, always at the beginning <tag> and often at the end </tag>.

HTML pages use standardized, predefined tags. For example, <p> means a paragraph, <h1> means a header and followed by means the enclosed text is to be bold. Web browsers interpret these tags and format the text accordingly when they display the pages on-screen.

With XML, however, programmers can make up tags, and browsers have no built-in way of knowing what the tags mean or what to do about them. Further complicating matters, we can use tags to describe data itself (content) or to give formatting instructions (how to display or arrange an element).

For instance, <table> could refer to a matrixlike arrangement of items on an HTML page, or it could signify a piece of furniture. This flexibility makes XML powerful, but it confuses the distinction between content and format.

In order to display XML documents usefully, we need a mechanism that identifies and describes the meaning of formatting tags and shows how they affect other parts of the document. Past mechanisms have included the Document Style Semantics and Specification Language, and Cascading Style Sheets [QuickLink 19839]. Both have now been extended and superseded by Extensible Stylesheet Language, a standard recommended by the World Wide Web Consortium (W3C) in 2001.

XSL provides a comprehensive model and vocabulary for writing stylesheets using XML syntax. It is used to define how to transform an XML file into a format (such as HTML) that a browser can recognize and understand.

XSL can add elements to the output file or remove or ignore existing elements. It can rearrange and sort the elements, test and make decisions about which elements to display, and a lot more.

Components of XSL

XSL is actually a family of three tools produced by the W3C's XSL Working Group: XPath, XSLT and XSF-FO.

- XPath, or XML Path Language, is used to specify the parts of an XML document that will be transformed by XSL Transformations (XSLT). XPath interprets an XML document as a hierarchical tree of nodes, which can include elements, attributes or text. The hierarchical tree is called the source-node tree.
- XSLT describes how to filter or convert (transform) XML documents into other types of XML documents, including XSL Formatting Object (XSL-FO) files. An XSLT stylesheet contains a set of template rules for transforming a source tree by matching a pattern against elements in the source tree. When a match is found, the rules are used to create a new node in the result tree. The result tree's structure can be completely different from that of the source tree because elements can be filtered and reordered and arbitrary structure added. An XSLT stylesheet is like a sophisticated search-and-replace routine.
- XSL-FOs are instructions that define exactly how a document will be formatted for a specific medium or device. For a document to be printed, formatting objects can include characters, blocks of text, images, tables, borders, master pages and the like.

XSL-FO specifies various layout rules (e.g., where page breaks can occur) and requirements (e.g., placement of footnotes), but the XSL-FO file itself doesn't determine exactly where each element is positioned. That's done by a separate formatting engine that interprets the file.

XSL-FO isn't restricted to printed pages and on-screen appearance; it can also specify audio reproduction, for example. Confusingly, XSL-FO is sometimes referred to as XSL.

Why XSL?

XSL is designed for repetitive situations where documents are dynamically generated and formatted on demand, not for documents that require a creative professional to modify the layout, content and typography to get an acceptable (albeit static) result. XSL is thus an ideal fit for documents that have to be output in a variety of formats and on many different types of devices, ranging from printers and computer screens to handhelds and phones. **46274**

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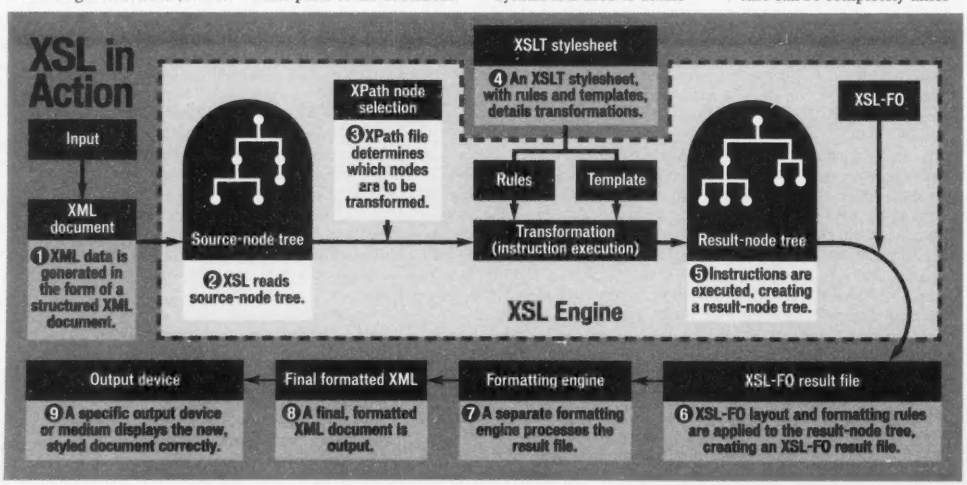

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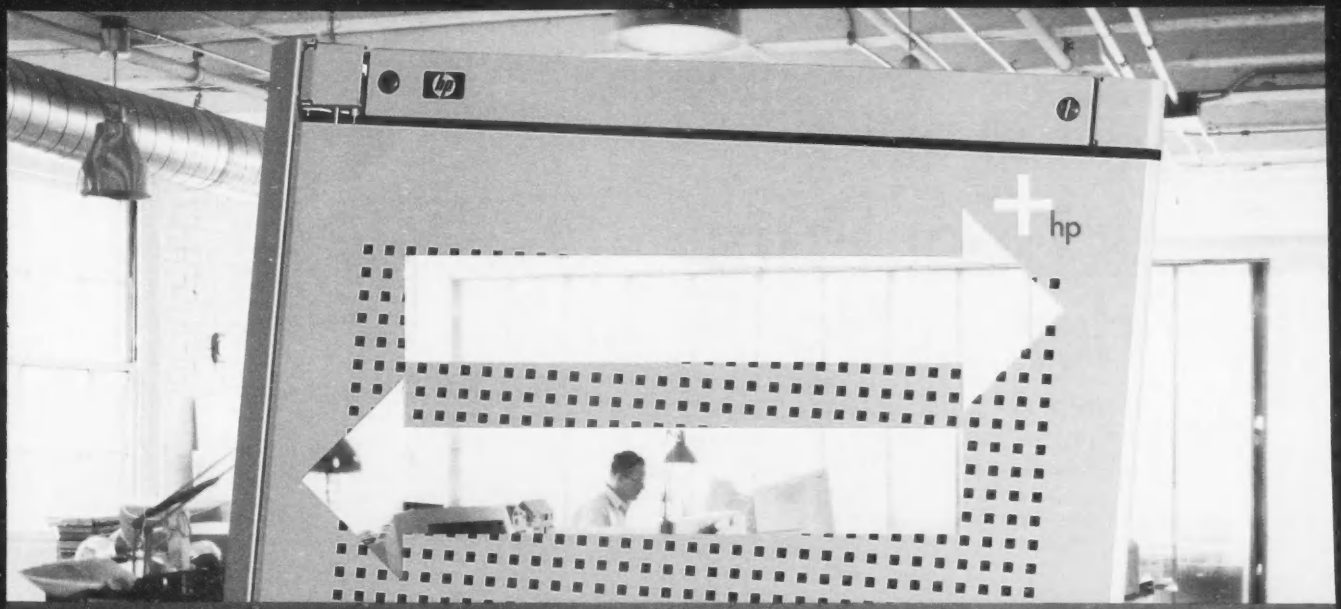

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Back Door Puts Vendor on Hot Seat

Notification of a hidden back door in a wireless LAN product leads to some hard questions during a vendor sales call. By Vince Tuesday

SECURITY MANAGER'S JOURNAL

IT'S NOT POLITE to poke fun at your vendors, but during a recent meeting with our Cisco reps, I couldn't resist. We had the reps in for a chat about some of Cisco's latest security products and our planned wireless LAN deployment. But my team and I had questions for them after reading news reports of a security problem with their Wireless LAN Solution Engine and Hosting Solution Engine products [QuickLink 46058].

According to the stories, if you authenticate with a certain username and password coded into some versions of those products, you can take over the system. In other words, the products have a back door.

In my experience, there are three kinds of back doors: those introduced by lazy developers, those put in by clever hackers and those put in by stupid hacker/developers. As we met with the Cisco reps, I wondered which category best described their problem.

If you're a hacker and you manage to break into a box, how do you make sure you can come back when you like? The owner will likely patch the hole you used. If you add your own normal account, it might be spotted and turned off, so instead you slip in a back door. Provide the correct username and password, and you're in.

If you're a lazy developer and can't be bothered to set up and remember usernames and passwords on all of your systems, you might embed them into the development code so that you have a way into every system for debugging and fixing problems. This may be acceptable in prerelease code but should be removed from the final product.

A not-so-smart hacker/developer might leave a back door to use later. But a hard-coded username and password would be an unlikely choice for such a back door. It would be quite obvious within the code, and product managers could use even the most basic change-control systems to quickly identify who added it.

A clever hacker/developer, however, might include a subtle buffer overflow or race condition so that if it was discovered, he could say it was a programming error. Given the high number of buffer overflows in current software products, a few deliberately slipped in are hardly going to stand out.

To be fair, Cisco isn't the first company to be hit with this problem, and it did issue patches right away. During my early days in this business, back doors were a big worry. The one built into sendmail, for example, was high on every auditor's checklist. Supposedly, the program's author got tired of wasting time trying to help people who had been unable to get his software working, so he installed a back door that let him connect to the remote system by simply typing "wiz." The system would reply "Please pass, oh mighty wizard" and provide a root prompt so he could diagnose and repair e-mail delivery problems.

> **Given the apologetic faces and mumbling around the table when we poked fun at these security flaws, I'm pretty sure this has caused some changes.**

But Cisco really shouldn't have let this slip through. The company is a leading network security vendor, so if this problem was caused by a lazy coder, why didn't Cisco catch it in the code review? Given the apologetic faces and mumbling around the table when we poked fun at these security flaws, I'm pretty sure this has caused some changes within the Cisco product teams. I doubt that we'll be seeing this kind of problem again.

The Tables Turn

When I've not been in meetings poking fun at errors on the vendor side, I've been in meetings where vendors have poked fun of and taken advantage of our mistakes.

We've been working for ages on an upgrade to our desktop antivirus scan engines. All the new systems we build have the latest engine, and all the systems have up-to-date virus signatures. But those signatures aren't enough to defeat virus infections.

The scan engine tells the antivirus tool where and how to look for extracts of files that should be compared with the signatures. So if a virus has found a new place to hide, or Microsoft has changed the format of an Office document, you'll need an updated engine.

I suspect that some vendors also release new engines as a kind of planned obsolescence, forcing users to upgrade. Our current vendor is certainly taking advantage of our delays in completing our upgrade.

Although the current signatures work with our old engine, that product has reached the end of its life. The vendor currently charges us tens of thousands of dollars per quarter for signature updates for the old engine. I suppose, however, that this is a small price to pay when you consider the alternatives: a painful, forced rush to finish the upgrades, or running without antivirus software at all.

The last time this happened, a few years ago, paying for signature updates gained us access to a special FTP download site containing signatures that were supposedly checked and tested for our older scan engine. But those files had exactly the same checksums as the generally available ones. At least the vendor had put on a decent show for us. This time around, it dispensed with the charade. The vendor just asked us to pay the money and told us to download signature files from the same generally available site everyone else uses.

Of course, we don't have to pay. We could just download the current signature files and use them, but we aren't that kind of company. Given that we're paying, it seems a bit impolite for the vendor to rub in the fact we aren't getting anything more for our money. Then again, given that Cisco knew about and had rectified the backdoor-password problem, perhaps it was impolite of us to rub that in. So I guess we're even.

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "Vince Tuesday," whose name and employer have been disguised for obvious reasons. Contact him at vince.tuesday@hushmail.com, or join the discussion in our forum. **QuickLink a1590**

To find a complete archive of our Security Manager's Journals, go online to **computerworld.com/secjournal**

SECURITY LOG

Security Bookshelf

■ ***Malicious Cryptography: Exposing Cryptovirology***, by Adam L. Young and Moti Yung; John Wiley & Sons Inc., 2004.

Cryptography has been the great savior of information security, making the Internet safe for e-commerce. But what would happen if the power of cryptography was hijacked? For example, could a virus writer encrypt your data and demand a fee to unencrypt it? This book attempts to answer intriguing questions like those.

The authors provide a guide to the "what ifs" of potential attacks. They discuss scenarios at length while skating over details such as how an attacker would receive a payoff without being traced.

Another quibble I have is that the first chapter uses second-person voice to describe a fictional incident. This kind of experimental fictional scenario isn't well suited to a security reference. But if you skip it and delve into the other chapters, you'll find this book a fascinating read.

– Vince Tuesday

CA Updates ETrust Antivirus

Computer Associates International Inc. has released eTrust Antivirus 7.1. The software features a centralized console for managing security across Windows, NetWare, Macintosh, Unix and Linux environments, and it can generate more than 60 reports about potential threats. Prices start at $40.

SecureZip Adds 3DES Encryption

PKWare Inc. last week released SecureZip v6 for Windows. The file-compression software now uses encryption algorithms based on AES and 3DES, said Brown Deer, Wis.-based PKWare. Prices start at $90.

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Network Associates

BRIEFS

WebSphere Gets Commerce Upgrade

IBM last week released WebSphere Commerce 5.6, an update to its software for building business-to-consumer and business-to-business Web sites. New features include an enhanced Business Context Engine that allows for greater personalization by separating user information from the business logic, and improved multichannel integration capabilities, according to IBM.

Riverbed Spawns WAN Appliance

Riverbed Technology Inc. in San Francisco last week announced the availability of its Steelhead appliance, which the company says makes applications running across WANs perform up to 100 times faster. Steelhead, which is Linux-based, sits on both sides of the network and uses data compression, caching and transaction prediction technology to optimize all TCP traffic. Retail prices run from $5,995 to $39,995.

VMware Supports 64-bit Processors

VMware Inc. in Palo Alto, Calif., last week announced that its virtualization technology will support the 64-bit Opteron processor from Advanced Micro Devices Inc. and Intel Corp.'s EM64T Xeon processor with 64-bit extensions, which is expected to be released this summer. Both chips are capable of running 32- and 64-bit applications.

CA Releases Oracle Productivity Pack

Systems management software maker Computer Associates International Inc. has announced the CA Productivity Pack for Oracle. The application offers a single console to optimize the development and management of Oracle databases and is available now. Pricing starts at $6,757.

PAUL A. STRASSMANN

The Cost of Short-Term CIOs

BACK IN THE June 10, 1996, issue of *Computerworld*, I first reported on the average longevity of CIOs in their jobs. Based on comparisons between 1994 and 1995, I calculated the one-year turnover rate for CIOs to be 24%, which translated into an average job-tenure expectancy of 25 to 28 months.

Those estimates were widely quoted in many articles by authors who arrived at various conclusions about the significance of my numbers. One author believed that the rapid turnover rate offered telling evidence that future CEOs were groomed for advancement by passing through a brief tour of duty in the CIO position. Others saw it as proof of the persistent failure by top management to understand the performance requirements for the CIO job. Frequent swapping of people in and out of the CIO position was seen elsewhere as an example of managerial confusion about the rising importance of information economics.

PAUL A. STRASSMANN (paul@strassmann.com) has been in five CIO jobs from 1962 through 2003. CIO tenure statistics are of personal interest.

To my best knowledge, there have been no published studies of CIO turnover in the eight years since. The time seems ripe to check whether the CIO position has acquired greater permanence as IT budgets have more than doubled.

In press reports, 244 companies identified the names of their CIOs both in 2002 and in 2003. Fifty-one CIO names were different from one year to another, offering an individually verified one-year attrition rate of 21%. However, the press also mentioned 111 CIOs in 2002 who didn't reappear in 2003. There were also 100 CIOs listed in 2003 who escaped press attention in 2002. If we assume — and from my experience, it's a safe assumption — that about half of these unidentified CIOs left their jobs in the interim, the one-year attrition rate climbs to 34%.

The best way to interpret the attrition numbers is to calculate the time it takes until only half of the original CIOs remain in their positions. Using the 21% attrition rate, there will be only 79 CIOs left out of 100 after a 12-month interval. After 24 months, there will be only 62 left. Half of the CIOs will thus be gone in 35 months. Using the 34% estimated attrition rate, there would be only 66 CIOs left after 12 months. Half of the CIOs would be gone after 21 months.

There is no way of telling whether the half-life of the estimated CIO population of well over 2,000 is 20 or 35 months. Based on the only data available to the public, one can assume that the number is somewhere between the two time periods and not much different from what it was in 1994/1995. I take this view because the sources of my information — the IT press — favor stories about CIO winners and therefore offers a positively biased view about CIOs who may be enjoying management's favors. Such a bias would tend to shift the actual life expectancy closer to the most conservative estimate of 21 months because the CIO loser would never get the attention from the press, whether he was coming or going.

I find these observations worrisome, in the same way that I did in 1996. The CIO's role is to guide the development, preservation, security and enhancement of a company's information assets. Such assets now exceed in value the financial assets that are guarded by the CFO establishment, which must comply with a long list of precedents, regulations and public scrutiny.

The only way to compensate for the absence of such consistency in policy and precedent is to put in place leadership in the person of the CIO, who will steer a steady course and be able to provide the necessary guidance for the IT organization. A leader can accomplish that only by taking a long-term view. Holding a job for only a brief time is inconsistent with committing to and then making progress against lasting objectives.

CIOs are likely to view the high turnover rates as incentives to make choices that will look good on their next résumé. Short-term executives will assume that they won't be around when the time comes to account for a perfectly predictable foul-up. Thus, the short time on a job becomes a self-fulfilling prophecy for avoiding responsible leadership. High CIO turnover is one of the telling symptoms of the malaise that makes our IT less effective than its potential. **45831**

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Think Tank
IT could play a role in finding the right decision-makers during a crisis. Plus, "category killer" retailers will be spending big on point-of-sale systems, data warehouses and RFID. **Page 36**

Q&A
Culture Wars
New research indicates that some IT projects fail because a distinct IT subculture damages relationships between IT and users, says Syracuse University assistant professor Jeffrey Stanton. **Page 35**

OPINION
What We Have to Fear
What's more dangerous to IT organizations than offshore outsourcing? Fear of offshoring, says Paul Glen. He suggests ways to face the fear. **Page 38**

Betting On IT Value

Harrah's has a sophisticated process for tracking the true payback of IT projects.

By Kathleen Melymuka

Harrah's IT portfolio management processes provide "one integrated version of the truth," says HEATH DAUGHTREY, vice president of IT services.

JEFFREY GREEN

MOST COMPANIES struggle to measure the real value of IT projects, but Harrah's Entertainment Inc. has a system. Over the past seven years, the IT leaders at Harrah's in Las Vegas have developed a robust financial projection, monitoring, measuring and tracking capability that accurately estimates the costs and benefits of IT projects and tracks the business value they create. The result: The business bets big on IT.

"Investments in IT help sustain our position as the industry leader," says Chief Financial Officer Chuck Atwood. "By setting up projects with specific return criteria expected, then monitoring achievement to those objectives, our IT team has built credibility within the organization."

And outside as well. Mark Jeffery, who teaches executive education at the Kellogg School of Management at Northwestern University in Evanston, Ill., recently completed an exhaustive study of best practices in IT portfolio management. Of the 130 Fortune 1,000 companies he evaluated, Harrah's ranked first. "Everything I teach in executive education, these guys are doing," he says. "They blew me away."

IT and business managers share accountability for Harrah's projects, which are designed to be measured and aligned with the business early and often. Frequent monitoring provides opportunities to raise the bets on promising projects and revamp or fold those that are falling short. Harrah's maintains an eye-in-the-sky view of the performance of the entire project portfolio, and project results are fed back into the decision-making process.

"We're constantly evaluating our investment in information technology," says John Boushy, senior vice president of operations and services. "And we make decisions going forward based on that."

Here's how Harrah's does it.

Portfolio planning. At the corporate level, the Program Management Office (PMO) uses Clarity IT management and governance software from Niku Corp. in Redwood City, Calif., to keep a running inventory of all projects and proposals segmented by business unit, product, life-cycle stage and overall goal, such as revenue growth, cost reduction or the opening of new business channels. "It provides one integrated version of the truth," says Heath Daughtrey, vice president of IT services. The PMO maps the portfolio to Harrah's business strategy, prioritizing projects across the business units and looking for an optimal mix. It also keeps tabs on IT resources (staff, skills, partnerships) and how those affect IT's ability to deliver.

At the business unit level, the PMO helps units prioritize projects and develop annual plans and budgets, looking for opportunities to leverage and advance enterprise architecture and product strategies while delivering value for the business.

Business unit governance. The business units authorize project budgets of up to $250,000. Governance teams made up of business unit and IT leaders identify business needs, approve funding and build a portfolio of projects. The IT Business Office, a component of the PMO staffed by accountants, assists in developing cost-benefit estimates. "It's been absolutely invaluable for IT to have a dedicated staff to support us in managing from a financial standpoint," Daughtrey says.

Jeffery's study suggests that Harrah's IT Business Office is a key to its success. More than half the other IT groups surveyed said they lacked the financial skills needed to do basic return-on-investment analyses.

The governance teams meet monthly and quarterly to review project performance, update the multiyear road map and evaluate and realign investments, for example, providing additional funding for projects that demonstrate compelling value.

This frequent realignment is critical. "Keeping score and frequent realign-

ment are among the factors that really make a difference in high performance," Jeffery explains.

Business case development. Projects with budgets of more than $250,000 need to be approved by the Corporate Capital Committee, which includes the CEO, the chief operating officer, the CFO, the CIO and various senior vice presidents. Using business case templates, the committee examines project functionality, initial and ongoing costs, timelines, benefits, metrics and organizational accountability.

The IT Business Office assists in business case development and benefits estimation and measurement, including internal rate of return, net present value, ROI and a five-year cost-benefit analysis. Every project has a business sponsor.

Corporate governance. The Corporate Capital Committee meets monthly to authorize new projects and review the performance of ongoing ones. It assesses both the risks associated with each project (delays, cost overruns, strategic misalignment) and the risks to the portfolio (the blend of mature and breakthrough technologies), managing priorities and maximizing value across the business units.

Implementation. Using integrated methodologies for project, delivery and quality management, project teams deliver. "They've got an incredibly competent IT team," Jeffery says. "They get the job done."

Current projects are reviewed at weekly meetings, where dashboards pinpoint key performance indicators, and they also pass through periodic tollgates. Business sponsors review projects monthly and quarterly to assess risks and provide early warning of problems. They're required to revisit the business case assumptions and attest to their continued validity.

Throughout the process, goals include leveraging the existing enterprise architecture, improving efficiencies and speed to market, reducing costs through reusability, developing people through rotations and making success repeatable.

"It's a combination of structure and flexibility," says CIO Tim Stanley. "We have crisp operating procedures and structure, but we maintain that flexibility to constantly align with business, be responsive as things change and really be able to go after the big hitters."

Value management. After implementation, the IT Business Office and the sponsoring business units conduct a formal audit to measure actual project value against estimates. Jeffery says Harrah's can do this easily because it designs projects to be measured. For example, through intensive use of customer satisfaction surveys, Harrah's can measure the revenue it will gain by moving a customer to a higher satisfaction level.

"They can do any business initiative and target specific customers and feed back how it changed their satisfaction levels and their spending," Jeffery explains. "That gives them a huge competitive advantage."

Inform, reprioritize. Project results are used to inform future investment decisions. For example, the results of a project to maximize revenue by increasing the ratio of high spenders in hotel rooms now help in estimating potential revenue growth from proposed hotel additions or expansions.

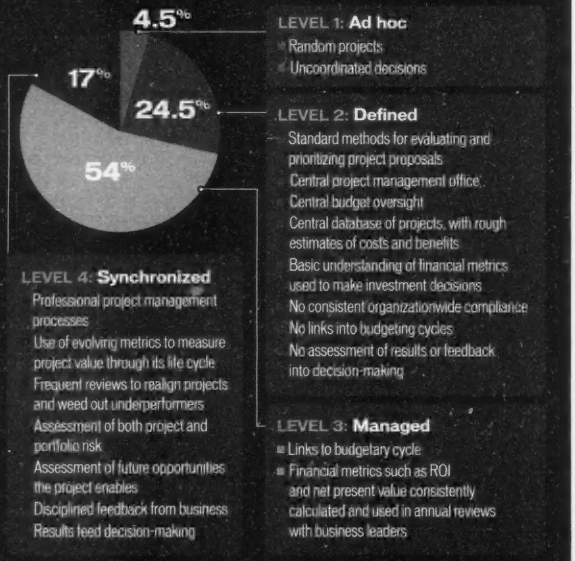
Niku CEO Josh Pickus says watching Harrah's performance makes him feel like "a Formula One race car designer who finally got the world's best driver" to drive his car. "The tools get exercised," he says.

Harrah's rigorous business case approach to projects, its built-in metrics, excellent execution and strong follow-up have led to an enviable performance. Project throughput has nearly tripled from 112 projects in 2001 to 324 in 2003. In 2003, the aggregate of projects in excess of $100,000 — 88% of total IT expenditures — came in at 9% under budget. Seventy-seven percent of all projects came in on time, on budget and on target, while 83% hit two of those criteria.

Stanley says the success of Harrah's IT portfolio management is largely about alignment. "Alignment is frankly pretty hard," he says. And while aligning each business unit with IT is challenging, "pulling it all together into an overall strategy is the secret to our success," Stanley says. **46150**

Portfolio Management Maturity Model

Based on a survey of 130 Fortune 1,000 IT groups and extensive research into best practices in IT portfolio management, Mark Jeffery of the Kellogg School of Management at Northwestern University has developed an IT Portfolio Management Maturity Model. Here are his findings, along with the percentage of survey respondents found in each category.



KEY QUESTIONS

For a sampling of the questions that Harrah's managers ask to keep their IT projects on track, visit us online:

QuickLink 46153
www.computerworld.com

THROUGH THE PACES:

A Real Project

A recent Harrah's project, the Revenue Management System (RMS), was targeted at increasing revenue growth by improving the ratio of high-rolling casino customers to other customers in the hotel rooms. The business case stated that the primary goal was to ensure that each hotel property filled as many guest rooms as possible with "rated" (high-spending) customers, thereby increasing revenue. It proposed to do this by integrating a forecasting and optimization tool with the existing Casino Management System and Lodging Management System. **The goal was to better manage hotel rooms by considering customer profitability, seasonality and promotional events in decision-making.**

The business case assumed a conservative 3% revenue gain per rated-customer room and conservatively estimated an internal rate of return of 39%, though it anticipated one of 88%. The plan included a clear way to measure project value by multiplying the extra amount a rated customer spends by the number of room nights that formerly went to low spenders but would now go to high spenders.

Hotel operations, marketing and IT would share accountability for the project, which called for an investment of $8 million.

After implementation, gross gaming revenue per rated room actually rose an average of 15% (far outstripping the 3% estimate), and there was a 16% increase in conversion of nonrated room nights to rated room nights. **The resulting revenue increase for the first year was more than $50 million, for an internal rate of return of 104%.** Moreover, while these initial benefits were realized for 10 properties, the system is now used at 25 properties, so an even greater payback is being realized. "It's the gift that keeps on giving," says Heath Daughtrey, vice president of IT services.

The success of the RMS project led to the subsequent approval of "Yield on the Web," a project that extended the RMS capabilities to the Web channel. Data from the RMS is also used in estimating the revenue growth potential of proposed hotel additions or expansions.

– Kathleen Melymuka

Culture WARS

Does the IT subculture contribute to project failure? New research from Syracuse University says yes.

Why do IT projects sometimes fail to achieve their goals? Earlier research focused on usability, employee resistance to change and other factors. But **Jeffrey Stanton**, *assistant professor of industrial and organizational psychology at Syracuse University, takes a new perspective by focusing on occupational subcultures within organizations. He told interviewer Peter Buxbaum that IT projects may fail because a distinct IT subculture poisons relations with end users.*

How did you go about studying IT subcultures? We focused on 14 organizations in central New York state. The organizations are involved in health care, education, manufacturing and social services. We conducted interviews with over 80 IT professionals and analyzed those [interviews] using software called Atlas.ti to detect patterns. We noticed similarities in the responses given to us by IT people.

What sort of patterns did you detect? We found that IT people used common modes of communication and expressed a common ethnocentricity.

We were struck by the common symbology used by IT people through which they expressed the unwillingness of computer users to learn certain things. We heard over and over again one story about the guy who put his coffee cup in the CD-ROM holder. It's an amusing and possibly apocryphal story, and it expresses the commonly held belief about the cluelessness of end users.

How does ethnocentricity come into play? Ethnocentric people believe in the importance of their group and in its differentness from others. We noticed indicators of group status among IT people in their belief that they possess esoteric knowledge, their perception of extreme working conditions and their complaints about other groups.

What is the connection between an IT subculture and the success or failure of technology implementations? If IT people occupy a distinct subculture, then implementations could boil down to culture wars between them and others. That may be at the root of the troubles organizations have in implementing IT.

How does this play out in the real world? We took an in-depth look at three organizations implementing substantial projects over a period of nine to twelve months in health care, manufacturing and social services.

[For example,] A.L. Lee Hospital replaced legacy systems that covered individual functions like the lab, accounting, etc., with a single hospital information system [similar to an ERP system]. It proved to be a difficult technological transition. We found in a qualitative way that the communications capabilities of the IT group had an important impact on the projects.

Are you saying that the IT people couldn't communicate with the business people? The communication at the hospital was good, as were the project outcomes, thanks to an experienced IT leader who effectively broke down barriers between the IT folks and the individuals affected by the changes. But the communication at the social services organization was poor.

Our data suggest that the failures of communication between IT people and the administration contributed to the problems with the technology-driven change.

How did this show itself? Planning meetings included only directors and assistant directors. There was no inclusion of affected employees. Communication was downward, and they allowed only minimal upward communications opportunities for affected employees. They didn't implement a pilot phase, and therefore, affected employees had no opportunity for interim feedback.

How were these communication problems tied to ethnocentricity? There was no individual within the IT group who could articulate the benefits of the changes to those who would be affected. As a result, the changes were viewed with suspicion by the workers.

Did you see evidence of culture wars during the implementation, and if so, how did they affect progress? There were conflicts between members of different cultures, and these caused communication breakdowns between the subcultural groups. These conflicts were rooted in differing beliefs about the potential benefits of the technology. The IT people valued compatibility with existing systems and maintainability, the administrators valued expected benefits in efficiency, and the users valued benefits that IT would bring to their quality of work life. These issues effectively stopped all progress in two of the organizations.

What can be done to overcome the subculture problem? Cross-training may be a powerful way of integrating cultures. How do Americans get immersed in other cultures? They volunteer for the Peace Corps or go on student exchange programs. A person living that kind of experience comes back to his home culture with a powerful appreciation of what it takes to speak across a cultural boundary.

Instead of sitting at a desk working on new network topologies, IT people should be sent to the lab, the accounting group or the reception area to live the experience of an end user. And you can take an accountant and make him an IT person for six months.

What would you expect the results to be? If cross-training were implemented beforehand, they would less likely get tripped up over cultural differences that could hamper the relationship between groups and scuttle the implementation. **46330**

Buxbaum is a freelance writer in Washington. Contact him at Pab001@aol.com.

Elements of an IT Subculture

IT people express their cultural differences in part by complaining about other groups. The following examples of IT complaints are taken from Jeffrey Stanton's research paper, "Conflict and Cooperation: Occupational Subculture of IT Employees."

- "Managers think they know how to get things done, and they think they can estimate how long it will take, but really they have no idea."
- "I have always said that I would have a great job if it wasn't for the users."
- "There is a huge sort of – pardon the term – 'Amish' kind of sensitivity to technology here. They are afraid of it. They don't trust it. They don't embrace it for what it can deliver."
- "When you are making a transition from a legacy system to a new system, you are going to get a lot of resistance from people who have built their careers on knowing everything about the old system. That's their power in the organization."

ThinkTank

BRAIN FOOD FOR IT EXECUTIVES

On-the-Fly Crisis Management

THERE'S POLICE TAPE across the front of your headquarters one morning because suspicious white powder was found inside. Do your employees know what to do? What if you can't reach key decision-makers? Who's next in line with the authority to give orders? Who has the right skills to deal with this particular crisis?

Companies may have standard disaster-recovery plans, but they rarely have a process for ad hoc crisis management, says Roberto Evaristo, an assistant professor at the University of Illinois at Chicago. He uses the analogy that SWAT teams have standard practices for hostage situations, but they also have skills to draw upon in new, unpredictable situations. Evaristo and collaborators Kevin Desouza and Tobin Hensgen are writing a book and consulting on the topic of "adaptive crisis management."

GETTY IMAGES

The No.1 problem is the communications breakdown that occurs when decision-makers are unavailable in the first few minutes or hours of a crisis, Evaristo says. He says the IT department could help by setting up systems that can be used to find and reach key people and identify employees who have critical skills, perhaps through wireless access to an expert database.

Most big companies have emergency "call trees" for contacting employees, but they're inefficient and fail if a person in the middle is unreachable, adds Tim DeLisle, a consultant at Corigelan LLC in Chicago. He suggests automating the process by using a service like the one offered by National Notification Network LLC in Glendale, Calif.

– Mitch Betts

Best Bits

The most useful parts of recent IT and business management books.

THE BOOK: ***Offshore Outsourcing: Business Models, ROI and Best Practices***, by Marcia Robinson and Ravi Kalakota (Mivar Press Inc., 2004).

You'll find a basic, albeit rosy, overview of offshore outsourcing in this book. The costs, benefits, examples and country profiles that you'd expect are all covered here. The authors are in the "offshoring is inevitable" camp and argue that the ability to manage offshore outsourcing is a "competency" that all companies will need in order to be competitive.

But there are frighteningly few recommendations for managing the risks and the downsides of offshoring. You won't read about the political backlash, U.S. layoffs or challenges such as security and privacy. There's a brief mention of how Dell Inc. had to yank its corporate tech-support operation from India because of customer complaints about poor communication [QuickLink 43172]. But the authors conclude that Dell just needs to work on "providing more accent neutralization, employee training and service quality management" in Bangalore to fix the problem.

– Mitch Betts

Category-Killer IT

■ **"Category killer"** retail stores will invest heavily in IT upgrades in the next 12 to 18 months as a result of a rebounding economy and intense competitive pressures, according to IHL Consulting Group, an independent research firm in Franklin, Tenn.

Category killers — large specialty retailers that dominate market segments, such as office supply and do-it-yourself hardware stores — tend to be shrewd and aggressive investors in IT, says IHL President Greg Buzek. For example, they tend to replace their point-of-sale terminals every four to five years, much faster than the typical store's replacement cycle of nine years.

IHL Consulting says these companies will also invest in large-scale data warehouses, radio frequency identification tags at the carton level and enterprise application integration to synchronize store operations with Web and catalog sales. **46285**

Offshore Hot Spots

The top six countries on the Offshore Location Attractiveness Index, based on labor costs, skills and business climate for white-collar work:

1. India
2. China
3. Malaysia
4. Czech Republic
5. Singapore
6. Philippines

SOURCE: A.T. KEARNEY INC., NEW YORK, MARCH 2004

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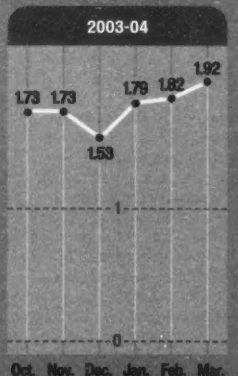
The IT Economy

■ **The U.S. banking industry will continue to consolidate and will shed 2,000 more banks by 2014,** according to a report by IDC subsidiary Financial Insights in Framingham, Mass. That means lots more systems integration projects for IT. "Banks are born to merge and acquire each other in order to sustain sufficient growth rates and profitability objectives," says analyst Bill Bradway. By the way, he adds, "history has shown time and again that banks that don't get IT right become acquisition targets."

■ **IT spending has regional variations.** Strong growth is expected in Western states, especially California, but not in the manufacturing strongholds of the Midwest and South, says IDC analyst Stephen Minton. IT spending will be depressed in states such as Missouri, Kansas and South Carolina. In the Northeast, spending in the finance and banking industries will lead the way, IDC says. In fact, 26% of all IT spending in the U.S. is done in the Northeast, IDC says.

Corporate Technology Confidence Index

Corporate IT hiring plans dipped, but the index nevertheless moved up in March on the strength of optimism about IT spending for hardware and software in the coming months.



Base: 294 corporate IT buyers. An above-zero score indicates more positive responses than negative.

SOURCE: TECH-ECONOMY.ORG, STANFORD, CALIF.

Career Watch

Dave Hammond

TITLE: Director of IT

EMPLOYER: Cardinal Health Inc., Dublin, Ohio

Q&A

As director of application architecture, Hammond oversees the data architecture and all database administration for pharmaceutical distribution at this $40 billion health care products company. Cardinal recently revamped its internal IT career-path structure to create parallel tracks with equal compensation for technical and business-focused experts within IT.

What career path would you recommend for an IT professional who wishes to focus strictly on technology rather than, say, project management and/or business analysis? There are probably two paths you can take. First, if an individual prefers the hands-on "down to the metal" experience, there is nothing wrong with becoming the best you can be at a technology like RDBMS programming or systems engineering. Most companies value employees with these deep technical skills, and that in and of itself can be quite a rewarding career.

On the other hand, if you enjoy thinking in the abstract about an entire problem or enterprise, I enthusiastically recommend the architecture path. Our company has architecture specialists in application development, data integration and systems.

In your opinion, how can such a person avoid hitting what some have called an inevitable technical career ceiling, especially these days, when all IT professionals are being told that knowing the business is often more important than knowing the technology? There is no question that business knowledge is critical – particularly for those techies that seek to apply their skills to a business. But this is not to say that business and technical knowledge are mutually exclusive. Understanding the motivation behind a requirement that you are about to implement will lead to better decisions. This isn't to say that we need [database administrators] sitting in on board meetings! The critical skill for IT professionals is not the ability to create new technologies, but rather the ability to see what is out there and to use existing technologies to create solutions that drive the maximum benefit for your company.

How do you address this issue with career paths at Cardinal Health? We are very fortunate at Cardinal to have leadership in IT and in HR that understands that there are some very unique technology skills that are absolutely required to run our business and that those skills don't always align with individuals interested in management. To that end, we have developed a career path that will allow senior technology professionals in database and architecture to proceed down a career path parallel with management all the way up to the director level. This really allows us to retain the best and brightest that might otherwise be tempted to take consulting or vendor jobs. **46286**

–Julia King

Higher IT Starting Salaries

College graduates of the class of 2004 are getting better starting salaries than their counterparts from the previous year.

DEGREE	STARTING SALARY	PERCENTAGE INCREASE
Computer science graduate	$48,656	8.9%
Information science graduate	$42,106	2.8%
MIS graduate	$41,103	1.3%

SOURCE: NATIONAL ASSOCIATION OF COLLEGES AND EMPLOYERS, BETHLEHEM, PA., APRIL 2004

You Can Lead a Horse to Water . . .

Evaluating employees' performance doesn't necessarily work to improve it, according to the results of a recent survey of 1,190 U.S. workers that was conducted by Watson Wyatt & Co., a human capital consulting firm in Washington. Even though 61% of workers agreed that they're fairly evaluated, only 30% said their companies' performance management programs actually improve performance. Just 19% of employees said evaluations help poor performers improve, and only 35% said they've received clear performance goals for this year.

Worth Noting:

"There's approaching 'shrinkage' in the IT area, during which time employees will be retiring in droves. This will improve hiring movement in the IT area, but it offers an interesting phenomenon. Census information and demographics indicate that there will be a shortage of IT employees within the next five years, due to the retirement of baby boomers. Some companies are already making efforts to keep these employees from retiring, including being asked to stay on for an additional three years and being offered flextime, stock options and significant salary increases.

STEVE HALL, RECRUITER, Find Great People International Inc., Greenville, S.C.

Numbers Crunch: Training

How corporate training budgets are allocated

17% Customer service	11% IT
14% Sales	6% Middle managers

SOURCE: AMERICAN SOCIETY FOR TRAINING & DEVELOPMENT, ALEXANDRIA, VA., 2003

BIGGEST SPENDERS

INDUSTRIES' PER-EMPLOYEE TRAINING EXPENDITURES

Transportation, pipelines and utilities	$1,143
Finance, insurance and real estate	$1,056
Technology	$1,003
Manufacturing (nondurables)	$927

SOURCE: AMERICAN SOCIETY FOR TRAINING & DEVELOPMENT, 2003

Best Practices: A Cheat Sheet For IT Managers

- Define competencies and skills required for each IT job description.
- Maintain a current inventory of skills.
- Address overall career-development issues as well as skill-specific training issues.
- Perform a gap analysis.
- Provide employees with tools to assess their own skills/development needs.
- Use a single portal for managers and staff to access all information about training and career development.

SOURCE: U.S. GENERAL ACCOUNTING OFFICE REPORT "INFORMATION TECHNOLOGY TRAINING: PRACTICES OF LEADING PRIVATE-SECTOR COMPANIES," 2003

BRIEFS

Federal Signal Picks Craig as CIO

Federal Signal Corp. announced the appointment of Alexander D. Craig to the newly created position of vice president and CIO. Craig previously worked at Williams International Co., where he was vice president for business, strategy and IT. Federal Signal, based in Oak Brook, Ill., is a global manufacturer of vehicles and of safety and signaling products.

General Motors Signs With Covisint

Covisint, a subsidiary of Compuware Corp. in Detroit, announced that General Motors Corp. has agreed to use Covisint Connect. The data messaging service will support traditional EDI as well as future ebXML-based communications. More than 6,000 GM supplier manufacturing locations will migrate to Covisint Connect. The service is expected to reduce the complexity of managing multiple formats, protocols and connection points.

Stenbit Named to Cryptek Board

John P. Stenbit has been appointed to the board of advisers of Cryptek Inc., a Sterling, Va.-based provider of network security for government and corporate information assets. Stenbit is former assistant secretary of defense for networks and information integration. He played an integral role in the update of the Department of Defense's information infrastructure.

White Joins GTESS Board of Directors

GTESS Corp., a Richardson, Texas-based provider of business process outsourcing services for the health care industry, has appointed John W. White to its board of directors. White served as vice president and CIO at Compaq Computer Corp.

PAUL GLEN

What We Have to Fear

LATELY I'VE HAD a troubling sense that there is a cancer growing in IT departments these days. No, I'm not talking about constrained budgets, poor alignment, hiring freezes or project failures. I'm not even talking about the growth of outsourcing and offshoring. While these issues are all real, there seems to be something even more toxic eating away at our industry.

What could possibly be more threatening to IT staffs than offshoring? Fear of offshoring.

This faceless, nameless dark terror seems to be gnawing away at the morale of IT professionals everywhere. They are filled with dread that they are witnessing a major sea change in their fortunes. It seems like the bursting of the tech bubble was more acceptable and less threatening than the prospect of offshoring. Those jobs just went away. They didn't go to some highly skilled engineers half a world away who were willing to work for less pay.

PAUL GLEN is an IT management consultant in Los Angeles and the author of the award-winning book *Leading Geeks: How to Manage and Lead the People Who Deliver Technology* (Jossey-Bass Pfeiffer, 2003; www.leadinggeeks.com). He can be reached at info@c2-consulting.com.

I wish I could quote Franklin Roosevelt and suggest that "we have nothing to fear but fear itself." But I can't. I'm not going to join the ITAA and the parade of economists telling us that offshoring is good for us (perhaps collectively and only in the long run) and that we should welcome it with open arms. I'm not so sure about that. Although management consultants like me are often heard chanting the "embrace change" mantra, I'm not sure that I want to snuggle up to this one.

But frankly, whether I like offshoring doesn't really matter. It's here, and it's not going away. Although the legal remedies being batted around Washington and various state capitals may slow the trend, no one can stop the relentless march of work across borders. We created IT to enhance the efficiency and mobility of labor, and it seems to be working.

But the natural and reasonable fear that this sort of metamorphosis brings seems a more immediate threat to our organizations than the change itself. Even though some estimates suggest that as many as 6% to 20% of IT jobs may eventually be moved, a relatively small percentage is directly affected by offshoring today. The fear of being on the losing end of this transformation is much more pervasive and immediately debilitating than the longer-term threat.

As a manager of a technical group, there are things that you can do to help alleviate the distractions and tensions that result from industry trends like this that are largely beyond the control of any of us.

Address the issue openly. Once a concern has entered the consciousness of a group, ignoring it won't make it go away. The fear of the unspoken is much more intense than the fear of an issue openly discussed. If you're going to experiment with offshoring, explain the purpose of the experiment. If you are going to do a major project, explain the boundaries around the project. Otherwise, the rumor mill becomes an echo chamber, and the scenarios played out there are probably much more imaginative and damaging than anything that might actually happen.

Plan for the future. A group without a clear understanding of its future imagines that it has none. Even if you're not sure what the future will bring, plan for what you can foresee. If you can't foresee much, develop a scenario and go with that. All plans are provisional and can be changed, but the disquiet of indecision can last a very long time.

Work for the future. A while back, I was asked to take over a group of IT professionals who had suffered a major leadership defection. I was constantly being asked, "Are we going to shut down this office?" I didn't really know, but I was sure that if people kept quitting at the current pace, it was much more likely. So we all went to work recruiting new staffers to replace those who had left. Once they were involved in this optimistic work, the questions and resignations stopped.

When it comes to offshoring, there may be nothing we can do to slow its progress. But if we let our fear of it diminish our productivity, the trend will only accelerate. So while it may not be the only thing, one of the biggest things that we have to fear is fear itself. **46097**

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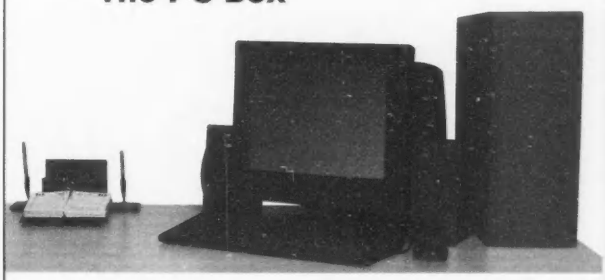

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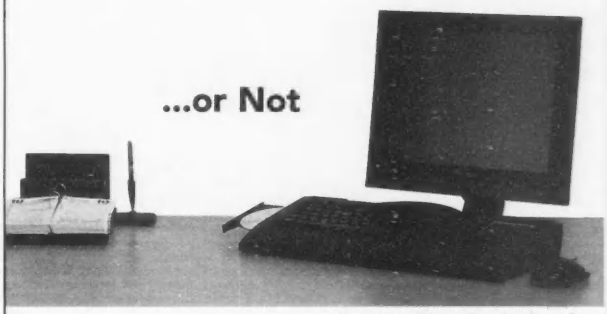

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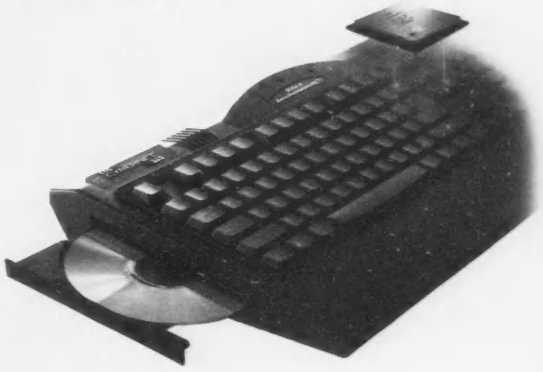

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Advertising Supplement

IT Careers in Security/Defense

With pronouncements of hiring tens of thousands of employees, it becomes clear that the government agencies and corporations working in support of security and defense offer some of the best opportunities for information technology professionals. The "gotcha" is whether you have or can qualify for a security clearance.

The focus, in terms of security and defense, is on converging data, making it available to multiple users, and mining the data for intelligence/knowledge. While the U.S. Armed Forces are among the heaviest of recruiters, the Transportation Security Administration is under pressure too. Currently, TSA is funded for 729 staff information technology positions; just over 270 of them have been filled. The 2005 budget calls for more full-time IT professionals. In testimony before Congress, Lt. Gen. Frank Libuttle, TSA's interim director, said his group will hire 40 people per month to fill the slots. In addition, the TSA budget documents indicate the agency is relying heavily on universities, national laboratories and companies to "push the scientific envelope" to deliver information sharing, infrastructure protection and new technologies and tools.

Northrop Grumman, in looking forward, continues to predict strong hiring, including the Northrop Grumman Information Technology unit. The corporation as an entity hired 18,000 employees in 2003, the majority in this unit. Most recently, the unit received a $337 million task order for the Department of Homeland Security's secure data network. The company is teaming with Information Builders to identify and pursue three national security activities – bioterrorism/syndromic analysis, identification and authentication solutions, and law enforcement data integration. The company's current careers listings range from human intelligence operations specialist to data warehousing, software development to JAVA specialists.

Lockheed Martin, which was a lead in airport security initiatives two years ago, continues to predict strong hiring in the next three years – conservatively estimated at 10,000 replacement and new workers every year. According to Tom Greer at Lockheed Martin Corporation, a large number of these jobs will be in the mid-Atlantic region and tied to new and existing security and defense contracts. Currently, the company employs more than 30,000 IT professionals and has 13 business units rated at Levels 4 and 5 for software engineering maturity. Greer said the hiring will include software developers/engineers, system analysts, network engineers, programmers, systems integration analysts and data administrators. About one-third of the new hires will require security clearances.

Other companies among the biggies claiming security and defense contracts include Unisys, Boeing, Raytheon, SAIC, Oracle and IBM.

For more information about IT Careers advertising, please contact: Nancy Percival
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- Development and service the ongoing partnership with internal customers/departments maintaining in-depth knowledge of business operations;
- Development and execution of IT business strategies, information requirements, and priorities;
- Driving initial customer needs analyses;
- Ensuring customer requests are compatible with technical direction;
- Prioritizing needs enterprise-wide, and participating with customers in the development of short and long term system plans;
- Using established practices and procedures, including infrastructure hardware/software standards;
- Evaluating training needs and providing career development and technical guidelines for staff; researching and analyzing new technologies with an eye to improving company processes.

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Computer Professionals
(Multiple Openings)

ePace Technologies, Inc. a worldwide provider of software solutions seeks motivated IT professionals specializing in Software Engineering, Systems Analysis, Database Administration and/or Network Administration. Successful candidates must have a Bachelors degree in Computer Science, Math, Engineering, Business, or related discipline (or equivalent and experience) in the following skills: C/C++, Java, Web Methods, Cold Fusion, Microsoft Technologies (Visual Basic, .NET, ASP) CRM (Siebel, Clarify, Vantive), Middle Ware Technologies (Orbix, Corba, Tibco, Vitria) Data Ware Housing Tools (Informatica, Data Stage, Abinitio, Business Objects, Cognos, Micro Strategy, Brio) ERP (SAP, People Soft, Oracle Apps, Baan), Mainframe (Cobol, CICS, JCL, VSAM) AS400, Ecommerce, Databases (SQL Server/Oracle/DB2/Sybase), Microsoft Windows(95/98/NT/2000,Exchange), UNIX (Sun Solaris, HP, AIX), Linux and QA (Win Runner, Load Runner, Silk, Quickpro, Manual Testing).Must be willing to travel and/or relocate to unanticipated locations in the United States. If interested, please mail your resume to:

Human Resource Director
ePace Technologies Inc.
3124 Old Faithful Road
Suite 10
Cheyenne, WY 82003

PROG-ANALYST

Direct & implement bus. computer & info. tech. solutions. Analyze, define, dsgn & dvlp sys. implmntns & upgrades for clients. Perform sys. analysis & mgmt. Provide on-going analytical & prog. support. Report project status/progress to mgrs & execs. Interact w/clients to understand bus. drivers & provide leadership on the use of technology to address their needs. Assoc. degree in Comp. Sci. + 2 yrs of exp. in job offered or as a Comp. Prog. or Sys. Analyst reqd. Must have exp. dsgng & maintaining comp. applns & sys. utilizing AS/400, RPG, SQL and CL. High mobility preferred. 40 hrs/wk, OT as reqd, 8am - 5pm, $66,533/year. Qualified applicants please submit resume to Manager, Butler County CareerLink, Pullman Commerce Center, 112 Hollywood Drive, Suite 101, Butler, PA 16001-5899. Please refer to Job Order No. WEB 412225.

Network Engineer, Hamden, CT - sought by IT/S/ware Co. to dsgn, configure & dvlp networks. Integrate diff. server platforms, test & ensure operating efficiency. Must have Bach, Deg in Comp. Sci & 2 yrs exp in job offd or 2 yrs exp as Sr N/wrk Engr or Sys Mgr or Admin. In lieu of Bach Deg & 2yrs exp will accept 4 yrs exp as Sr N/wrk Engr and/or Sys Mgr or Admin. Spvse 1. Must be cert'd in Windows 2000 Srver, Exchange 2000 Srver & Windows 2000 Professional. Send resumes to: VP, SNP Technologies, Inc., 1890 Dixwell Ave., #205, Hamden, CT 06514.

Prog/Analysts to analyze, design, implement appls using C, C++, VC++, Socket Programming, Shell Scripting, TCP/IP, Rational Rose, Clear Case, etc. under Windows, Unix and VxWorks; perform testing, debugging, documentation of appls; maintain and support existing appls. Require: B.S. or foreign equiv. in CS/Engg. (any branch) & 2 yrs exp. in IT. Travel involved. F/T. Comp. salary. Resumes to: HR, Ciphertrust, Inc., 4800 North Point Parkway, Ste 400, Alpharetta, GA 30022.

Dictaphone Corp. looking for Principle Engineer for our Stratford, CT office. Must have M.Sc. degree in Comp. Sc. or related field & 5 yrs. of exper. dvlping. telecom. & web-based embedded prods., incl. at least 3 yrs. of exper. dvlping. call recording systs. on QNX platform, as well as exper. dvlping. network parsers, network device drivers, packet filtering, & packet sniffing, & programming w/ C/C++. Please send resume to HR Dept., Dictaphone Corp., 3191 Broadbridge Avenue, Stratford, CT 06614. AD CODE - JP.

Programmers & Software Engineers (Chicago, IL & Atlanta, GA): Analyze, design, develop, test & implement specialized apps. in (a) WebMethods Oracle Apps 11i, Siebel, JD Edwards, Clarify & rel. tools; (b) HIPAA, Telecom, Banking Apps. in Mainframe / Oracle, Java, SQL Server and rel. tech.; (c) Ariba Buyer / ORMS, SAP, JD Edwards, Mainframe / Mid-Range, Java Suite & rel. tools; (d) Java Suite, Rational Rose, MQ Series, WebLogic, Jakarta Digester, UNIX Scripts, WebSphere, DB2, LDAP Server & rel. tools. on Windows / Unix / Sun Solaris. Send resume to, HR, 906 Lacey Ave., Suite # 200, Lisle, IL 60536. EOE.

Business Systems Analyst, NH IT firm. Req Bachelor's deg. in Eng, Comp Sci , prepare project proposals that incl. techlogy evaluation, cost estimations & risk analysis w/2 yrs of exp. Skilled in Microsoft project and MS Excel. Knowl. of excel add on risk assessment appli'ns like @Risk is highly desirable. Apply with /2 copies of resume to HRD to Worldwide Information Technology Services, 155 Fleet Street Portsmouth, New Hampshire - 03801.

Programmer: design, develop, configure, code, and implement computer programs; maintain and troubleshoot Edge internal/external issues; update Edge design and functionality. Req. MS in CS or MIS with proficiency in HTML, ASP, VB-Script, JavaScript, IIS, SQL Server. 8-5, 40hr/wk. Send resume to Titan Management Group, LLC at 1136 Zion Church Road, Building B, Suite 130, P.O. Box 879, Braselton, GA 30517.

Software Engineers needed by Alpharetta based IT Co - Bachelors degree with 1-2 years of experience in job. Exp in Skill sets incl: C, C++, Java, EJB, JSP, Servlets, XML, UML, 4GL, XSTL, TIBCO, I2, Unix, NT, VB, ASP, C#, .Net, AS/400, COBOL, DB2, CICS, JCL, MVS, VSAM, Embeded/Firmware, Oracle, SQL, Natural, Clearcase Admin, MQSeries, WEB Methods, Vitria, SAP, Peoplesoft, Informatica, COGNOS, Business Objects. Send resumes to resumes@anisi.com. Frequent travel required.

Computers - Programmer Analysts needed. Seeking qual. candidates possessing MS or equiv. and/or relevant work exp. Part of the req. relevant exp. must include 2 years working with VC++ and 1 year working with ASP & SQL Server. Exp. can be simultaneous. Duties include: Design, develop test and maintain software applications including middleware, database & internet applications; Work with VC++, ATL, COM+, ASP, SQL Server. XML/XSLT, MSMQ. Mail resume & ref. to: Object Solutions, Inc., Attn: HR, 3025 Harbor Lane, # 312, Plymouth, MN 55447-5119.

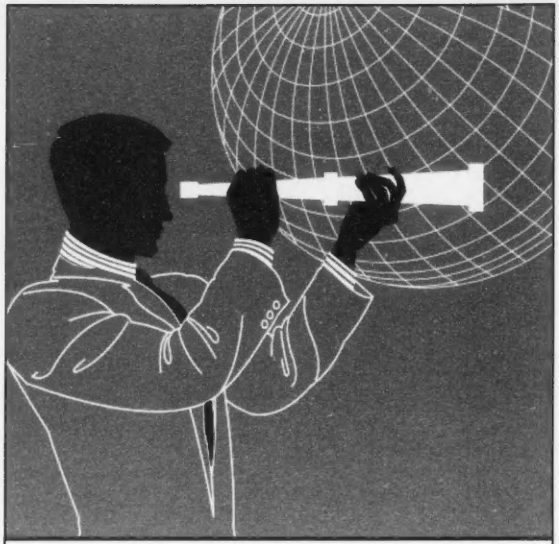
Web-Database Administrator/ Software Engineer. Seeking qualified candidates possess B.S (Electronics & Communication) or equivalent with related work experience of 3 to 5 years. M-F, 8AM-5PM. Duties: internet development, ecommerce applications, with knowledge of COM, COM +, MTS, IIS, HTML, DHTML, Java Script, Microsoft and Sun Technologies with databases Oracle 8.1 & MS SQL Server 2000 and MS-Access 2000. Please send resume to Oxford Affiliates Inc., Attn: Mr. Yakim Lalani 4800 Texoma Pkwy, Suite 202, Sherman TX, 75090.

Edify Technologies, Inc. is looking for Programmer Analysts. Should have Bachelor's degree in Computer Science, Engineering or related field with 2 years experience in C++, Web Services, WML/ Perl/Shell Scripts, XML, cXML, .NET Remoting, RosettaNet, Ant, WebLogic, Siebel EAI/EIM/Remote Admin, Siebel eScript/Email, Clarify. We accept foreign education degree or the degree equivalent in education and experience. Send your resume to: Edify Technologies, Inc. 16614 Kingsbrook Dr., Crest Hill, IL-60435. e-mail: resumes@edifytech.com

Fast Enterprises, LLC is seeking Project Managers to direct activities surrounding implementation and installation of COTS solutions for revenue agencies throughout the U.S. Interested, degreed, experienced professionals, please respond to:

Project Manager Recruiting
L. Forest
800 Park Boulevard
Suite 720
Boise, ID 83712

Software Engineers needed. Seeking candidates possessing BS/MS or equiv and rel work exp. Duties include: Design and develop software applications and work with COBOL, Java, Oracle, MVS, DB2 and SQL. Exp. must include 2 years working with COBOL, MVS and Oracle. Mail resume, refs and salary reqs to: Symbiosis International, 3965 Okemos Road, Suite B2, Okemos, MI 48864.



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Applications Support Analyst sought to provide end-user support, resolve problems and track resolutions for Miami, FL office of law firm that utilizes a variety of applications. Also responsible for providing backup support to other Information Technology staff as needed, to include meeting with vendors and training users on use of software. Requirements include a Bachelor's Degree (or equivalent) in Computer Science, Engineering, Information Systems, or related field plus two years of experience in a Windows environment with proficiency in the following applications: Windows XP, MS Office Suite and legal industry applications such as DOCS Open, Carpe Diem, Deltaview, iPRO, Concordance and E-Binder. Experience working in a law firm or corporate environment, in a computer support services area on a local area network is preferred. Competitive salary and benefits offered. Interested candidates should send resume to: Administrator (Job Code 1208), Hunton & Williams LLP, 1111 Brickell Avenue, Suite 2500, Miami, Florida 33131. Equal Opportunity Employer.

SYSTEMS ENGINEER

Specify, design, code, test and maintain systems software used by company application in the UNIX environments of Sun Solaris, IBM AIX. Track UNIX technology directions and ensure that company products are tailored appropriately for the UNIX environment. C tree experience and knowledge of UNIX system services: threads, daemon processes, signals and client-server architectures. Must carry a beeper travel up to 50% of the time. 3 years of C ++ experience required. Bachelor's degree or equivalent in Computer Science or related field. Five years of experience in job offered or related occupation. 40 hours per week, 8:00 a.m. to 5:00 p.m., $72,542.88/year. Must have proof of legal authority to work in the United States. Send your resume to Madhavi Bhadbhade, Nebraska Department of Labor, P.O. Box 94600, Lincoln, NE 68509. Refer to Job Order TREL5-Y8N75-58428. This advertisement is paid for by the employer.

Programmer Analyst, Delphi, multiple positions, to program, analyze, test, troubleshoot and develop Delphi software as a front end for use in real-time muti-tiered Tibco/DCOM based business system applications installed in a distributed client server environment including implementation in an intra/internet environment. May use tools such as MIDAS, SOAP, COM/DCOM, Object Pascal, PVCS, Visual Source Safe, Rational Clear Case, TOAD, DLL, Visual Basic, Web Logic Server or Quick Reports as required in performance of duties. Requires Bachelor's Degree in Computer Science, Computer Engineering or Computer Information Systems and one year experience in the job offered position. Work location: Various unanticipated client sites. Send resumes only, no calls, to: Genome International Corporation, 583 D'Onofrio Drive, Madison, WI 53719.

I/O Software, Inc. has an opening for a Business Development Engineer in Riverside, CA. Bachelor's degree in Engineering or related w/5 yrs as Manager/Engineering support. Biometrics security technology; PC OEM and Smart Card security technology for business development and sales reqd. Please send resume to: jobs@iosoftware.com

Software engineers/system analyst wanted by Saras America to design and develop applications using various skills. Min is BS/MS with exp in IT field. Traveling is required for some positions. We offer competitive salary with full benefit. Please send resumes to hr@SarasAmerica.com. EOE. No calls.

Emergtech is looking for IT professionals to design software and computer systems to meet project requirements. Candidates must have BS/MS degree plus experience in the computer field. We are small but stable. Travel maybe required. Please send resumes to job@emergtechinc.com. EOE.

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INFOTECH CONSULTING, INC.
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Software Engineers,
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- Microsoft Technologies
- a) DNA, COM/DCOM/COM+/MS
- b) DotNET, C#, VB.NET, ADO.NET, XML, assemblies, Remoting
- c) XML with MS SQL Server
- d) Version Control, VSS Integration, Configuration Management
- VB, ASP
- XML (DOM, SAP) DotNET, Java & C++ Parser
- OOPS, CORBA, ORDBMS, Design Patterns, MOM Concepts
- Object and Database Modeling - CASE Tools (ERWIN, Designer, Cool:GEN) UML (Enterprise Architect, Rational Rose)
- SAP, Peoplesoft ERP, ABAP, Oracle Applications (Financials)
- ORACLE database Developer, Designer, Actuate Web Reporting
- UNISYS Mapper/COBOL, PowerBuilder
- IBM Mainframe, MQSeries and Related Technologies
- DBA- Oracle, DB2, SQL server

Computer Programmers should have bachelor's degree (or its functional equivalent) in Computer Science/quantitative disciplines & 2+yrs relevant experience. Software Engineers should have master's degree (or its functional equivalent) in Computer Science/quantitative disciplines & 2+yrs relevant experience or bachelor's degree (or its functional equivalent) in Computer Science/ quantitative disciplines & 5+yrs relevant experience. DBAs should have bachelor's or master's degrees (or functional equivalents) and 2 + years relevant experience. Candidates must be willing to travel & relocate. Send resume to: Recruitment CWW, Infotech Consulting, Inc., 4750 Delbrook Rd., Ste. 201, Mechanicsburg, PA 17050; Fax: 717-731-9857; Email: hsingh@infotechpa.com. Visit our website at http://www.infotechpa.com.

Programmer Analyst (Micro/Web) - Multiple Openings

Structured systems analysis, design, development, testing, quality assurance, implementation, integration, maintenance and support of integrated client-server based systems for business, financial, banking, manufacturing and other commercial business application systems in a multi-hardware/multi-software environment using centralized or distributed relational database management systems, 4GLs (Fourth Generation Languages) and other GUI (Graphical User Interface) front-end tools. Analysis, design and development of client-server applications using object-oriented methodology. Bachelor's Degree (or equivalent) in Computer Science-Math/Engineering/Science/Business-Commerce and 1 yr. experience in job offered or as Software Engineer/Systems Analyst are required. Must have appropriate combination of skills as follows: 1 of A and 2 of B; or 2 of A and 1 of B; or 3 of A. A includes Oracle, Sybase, Informix, SQL Server, Progress, Ingres, Access and Proxy Server; and B includes PowerBuilder, Visual Basic, MS-Windows, Visual C++, JAM, APT-SQL, SQL*FORMS, ESQL/C, GUPTA SQL, Progress 4GL, Informix 4GL, Ingres 4GL, Java, Lotus Notes, HTML, CGI, IIS, ASP, Front Page, Perl and Java Development Kit (JDK); High mobility preferred 40 hrs/week, 8 am - 5 pm. $67,995 - $78,000 per year. Qualified applicants should contact or send resume to Mon Valley Regional CareerLink, ATTN: Actg. CL Program Supervisor, Donora Industrial Park, 570 Galiffa Drive, Donora, PA 15033. Refer to Job Order # WEB 412581.

SOFTWARE ENGINEER to design, develop, debug and test data porting application software, and configure computers for optimal performance using Win 2003 Server, IIS, .NET technologies, C#,Visual Studio.NET, Web Services, Web Forms, Win Forms, ASP.NET, Java Script, VB Script, HTML, Oracle Forms/Reports (Oracle Developer), Oracle, SQL Server, SQL Server Enterprise Manager, Query Analyzer and Profiler, COM/DCOM, ODBC OLEDB, ADO, ADO.NET, XML/XSLT and SOAP under Windows, MAC, Sun Solaris and AIX operating systems. Responsible for benchmark product quality and performance; Develop and automate performance testing tools using C#, SQL, TSQL, Stored Procedures, Functions and Triggers on high-end computer hardware. Require: Master's degree in Computer Science, an Engineering discipline, Electronics, or a closely related field with 2 yrs of exp in the job offered or as a Software Test Engineer or Systems Analyst. Extensive travel on assignment to various client sites within the U.S. is required. Competitive salary offered. Send resume to: Krishna Mupparaju, Data Matrix Associates, Inc., 102 Furlong Court, Frankfort, KY 40601 Attn: Job BK.

Data-Core Group, Inc. has immediate, opportunities for experienced Programmers, Programmer Analysts, Systems Analysts, Database Designers, and Software Engineers with a Bachelor's degree and one year of experience in three or more of the following: PowerBuilder, Visual Basic, SQL & RDBMS Oracle 7.1 or later, Crystal Reports, Rational Rose, IBM mainframe environ., MVS, COBOL, JavaScript, HTML, DHTML, C++, Visual C++, Sybase, IIS, ASP, Java, LAN & WAN networking, SNMP, Frame Relay, UNIX, Socket Interface, Network Node Manager, TCP/IP, Open View, Shell scripting, Oracle SQL, Configuration Management Software. We also accept the foreign edu. equiv. of the degree. All positions require frequent travel and relocation throughout the U.S. Send résumé to 3700 Science Center, Ste. 203, Philadelphia, PA 19104. Visit our website at www.datacoresystems.com.

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Support Engineer - Must have BS in Computer Science or Engineering. Must have 4 years of experience in the job offered or as a Systems and Network Engineer. To maintain Exchange server, Windows 2000 file/Apps servers, RAS and DHCP servers; stage Windows 2000 servers, Oracle 8i/9i servers, VSoft's product and IIS 5.0 for web-based products and provide remote client support using PCanywhere; maintain Cisco routers, Switches, Cisco 3000 series VPN boxes; maintain firewall with updated patches and change rule-sets as per requirement; and configure centralized Symantec Systems Center to download from the web, push the updates and anti-virus scans to all the workstations in the network. Qualified candidates must send resumes to VSoft Corp., S. Viswanathan, 6455 East Johns Crossing, Ste. 450, Duluth, GA 30097.

Computer - Decru, Inc. is seeking a Team Leader for Software Cryptography Engineers in Redwood City, CA. Candidate will direct team of software cryptography engineers to develop and improve encryption devices which: 1) encrypt data at rest; 2) are FIPS 140-2 level 3 certified; 3) operate at 4 GBS encryption speed; 4) use smart cards for device management & security enforcement; 5) operate transparently; and 6) are reliably clustered through untrusted network. Candidate will direct software engineers who: 1) improve performance of TCP/IP stack; 2) implement IPSec protocol; 3) write & improve driver performance for Fibre Channel & SCSI devices; 4) write IPSec hardware accelerators drivers; 5) incorporate TCP/IP stack directly into software; 6) profile kernel, network stack & storage access protocol modules; 7) create performance analysis of NFS, CIFS and Fibre Channel systems, with and w/o these devices, to improve their performance; 8) reorganize memory mgmt. schemes to obtain zero copy for data being processed; 9) eliminate race conditions w/o affecting performance; 10) perform security review & correct vulnerability of modules, 11) track CERT security advisories to ensure compliance; 12) architect, develop & test automated build systems to automatically build firmware releases using Java, C and assembly languages. Please email resumes to talent@decru.com.

Applications Development Analyst - Analyzes systems requirements & corrects systems errors. Design software & determine solutions based on requirements. Code, test & execute test programs. Document programs in specialized languages. Requires Bachelor's degree in Computer Science, Computer Engineering, Engineering, Information Systems or related plus 1 year of experience in the job offered or 1 year of experience in C/C++ programming. Employer will accept the 1-year experience in C/C++ programming gained before or after the bachelor's degree. Must also have knowledge (3 credit hours) of at least one of the following: Java, RDBMS, SQL, Unix or Visual Basic. Salary: $51,861.96 40hours/week, 8:00am-5:00pm. Job location: Lexington, KY. Only persons with authorization to work permanently in the U.S. need to apply. Must submit resume to: Ginny Burton #3563, Department for Employment Services, 275 E. Main Street 2-WA, Frankfort, Kentucky 40621. EQUAL OPPORTUNITY EMPLOYER.

Millennium Software, Inc. has opportunities: Programmers, Systems Analysts, Software Engineers, Consultants, DBAs, Architects and Project Managers with 4 or more skills in following environments: Java, EJB, Shell Scripts, SAS, PLC, Textra, XML, SQL, mqPCX, PowerBuilder, Rational Rose, Relational Databases, Perl, SAP, Primavera Team Play / P3e, Teradata, MQ-Series, IMS, Adabase, Natural, Websphere, Oracle Workflow, Filenet eprocess, Floware Workflow engine, C/C++, HTML, VisualBasic, COBOL, DCEDFS, AutoCAD, Six-Sigma, ASP.net. B. S. or M.S. degree reqd. We also accept the foreign edu. equiv. of the degree, or the degree equiv. in edu. and exp. Frequent travel and relocation. Send confidential résumé and salary requirements to: 2000 Town Center, Ste 300, Southfield, MI 48075. Visit our website at www.webmsi.com.

Database/Oracle Developer to Analyze, design, and develop Oracle Applications based on technical requirements and various specifications. Utilize VISTA application for publishing companies. Utilize Oracle 6i, Oracle 9iAS version 1.0.2.x, PL/SQL, SQL Loader, Oracle Forms & Reports 6i deployed on the web using Jinitiator and JavaBeans incorporated in Forms, TOAD, Forms & Reports Server, Jinitiator 1.3x, SQL Loader, Data Warehouse concepts, DBA Functions. Support DBA Role. Bachelors Degree in Information Systems or Computer Science or equivalent and five years experience. Send resume to: Aspen Publishers, a Division of Wolters Kluwer, 2700 Lake Cook Road, Riverwoods, IL 60015; by e-mail to hrfred@aspenpublishers.com

Project Manager, PeopleSoft Practice - Manage & supervise PS HRMS projects. Lead bus. analysis of org structure, info sharing between depts, program integration, interdepartmental communication & internal policy development. Facilitate client communication. Manage & supervise prog. analysts in design, development & implementation of projects. Will accept Bachelor's degree or foreign equiv or equiv combination edu & exp. Must have 1 yr exp as project mngr using PS HRMS & 1 yr exp as HR mngr. $75,365/yr 40 hrs/wk EEO/AAP/M/F/V/H Submit resumes to Fayette County CareerLink ATTN: CareerLink Program Supervisor, 135 Waylan Smith Dr, Uniontown, PA 15401 Job Order No WEB411822.

JUNIOR PROGRAMMER/ANALYST to analyze, design, develop, implement, and support internet/intranet based application software using C, C++, Cold Fusion, Access, Java, SQL Server, HTML, Oracle, Java Script, and XML under Windows operating systems. Require: B.S. degree in Computer Science, an Engineering discipline, or a closely related field with one years of experience in the job offered or as a Programmer. Extensive travel on assignments to various client sites within the U.S. is required. Competitive salary offered. Send resume to Pishu Harjani, Focus Software, Inc., 22 Perimeter Center East, Suite 2205, Atlanta, GA 30346; Attn: Job PK.

Charter Global, Inc. has openings for Programmers, Software Consultants, Programmer Analysts, DBA's, Systems Analysts, Software Engineers and Engineering Programmers Bachelor's or Master's degree (or foreign equiv) plus 1 - 2 yrs exp req'd depending upon position. For some positions, we also accept degree equiv. in educ. & experience. Travel and/or relocation required. Send resume & salary req. to Charter Global, Inc, HR 5445 Triangle Parkway, Ste 190, Norcross, GA 30092.

Colonial Life & Accident Insurance Company has an excellent opportunity for a Systems Manager III. Req. minimum of a BA/BS in Comp. Sci., Engg, Math, Statistics, or IT & 7 yrs. exp. in data warehouse mgmt. consulting & implementation. Exp. must involve work w/ data warehouses/ware technologies incl. Microstrategy, Assential, GROUP1 & SAS. Send resumes & cover ltrs. to HR Department, Colonial Life & Accident Insurance Co., 1200 Colonial Life Blvd., Mail Stop SC135, Columbia, SC 29210. EOE. Colonial Supplemental Insurance is the marketing brand of Colonial Life & Accident Insurance Company.

Full-Time TSG Specialist: Use database management & programming in Oracle, MS SQL, Cold Fusion, ASP, Visual Basic, C++, .Net, PL/SQL & Access. Salary competitive. Must have Bachelor's degree in Management Information Systems or related field. Employer will accept Master's degree in lieu of Bachelor's. Educational background must have included above listed computer skills. Send resume to Ms. Vogelien, HR, UPS, 1600 Cottonwood St., Charlotte, NC 28206.

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Datacenter

knowing the stuff is going to be reliable," said Jeremy Lehman, a senior vice president in charge of the technology group at New York-based Thomson Financial, a customer since last October. "The beauty of Unisys is that their whole culture is about big systems that can't go down."

But the early editions of ES7000s running Datacenter could be pushed to their limits, as First American Title Insurance Co. discovered. The Santa Ana, Calif.-based insurer found its ES7000s "running out of gas" during peak times, especially as West Coast employees logged on and joined colleagues nationwide in accessing the company's mission-critical title and escrow system, said CIO Larry Godec. About 11,000 users rely on the homegrown First American Software Technology (FAST) Transaction System.

"We really needed more horsepower," Godec noted.

The Contest Begins

Godec said he was anxious to try out Intel Corp.'s 64-bit Itanium chips with the FAST application and 64-bit SQL Server because of the performance gains he thought First American could get. Last December, First American benchmarked a 32-way Hewlett-Packard Co. Superdome running 64-bit Itanium chips against three different ES7000s: a 32-way box with 900-MHz Intel Xeon processors, a 32-way box with 2.8-GHz Xeon processors and a 1.5-GHz 16-way Itanium box.

"If Unisys had a 32-way box [running 64-bit Itanium] and performed better than the HP box and was shown to be stable, it would have come down to price," Godec said. "It's not that we were trying to throw Unisys out for any reason."

To no one's surprise, the 32-way HP box running Itanium "blew away" the 16-way Unisys box equipped with Itanium, Godec said. So First American soon began moving to new HP hardware and Windows Server 2003 Datacenter.

CIO LARRY GODEC switched to new HP hardware and Windows Server 2003 Datacenter.

The switch didn't happen without a few bumps, including error handling problems with the Itanium chip, Godec noted. But now that all the kinks have been worked out, First American can focus on enhancing its FAST application rather than fretting over performance, he said. The company repurposed its ES7000s for its data warehouse.

Another early ES7000/Datacenter adopter, an international cosmetics manufacturer, chose a different approach. The company wants out of the Datacenter program entirely, according to the database manager, who asked that he and his company not be identified.

He said the Datacenter reseller program has been too restrictive. Because the cosmetics company opted for a storage product that wasn't one of the certified configurations for the ES7000/Datacenter system, it found it would have to pay to get its configuration certified, according to the database manager. He said he prefers more choice for external products.

The cosmetics company has no plans to abandon Windows, and Unisys remains in the running. But it's testing its massive SQL Server 2000 databases on the 64-bit Enterprise Edition of Windows Server 2003 running on Unisys, HP and IBM hardware with 64-bit Itanium processors, according to the database manager. He said his research indicates that 1.5-GHz Itanium processors will be faster than 3-GHz 32-bit processors.

The cosmetics company is testing a cluster of two eight-way 64-bit servers running SQL Server, rather than the two 16-way 32-bit ES7000s it currently uses. The database manager added that if all works well, he hopes to be able to replace the two ES7000s leased at a total cost of $800,000 with six smaller servers leased for $280,000 — and improve performance to boot. An end-to-end process that took four hours to complete in the 32-bit world is now done in 40 minutes with 64-bit chips, he said.

Lehman said he has "played that game" of trying to come up with less expensive configurations that can boost performance. But he said configuring and managing the boxes requires significant IT effort, and he prefers that his developers focus on building new products for Thomson.

Tom Bittman, an analyst at Gartner Inc., said that although Windows Datacenter sales are growing, it's still at a slow rate. In contrast, Enterprise Edition is a much higher-volume product with a faster rate of growth, he said.

Yet it's no longer difficult to find users who are happy to talk about their current Unisys/Datacenter systems. Gary Clark, director of corporate IT services at La-Z-Boy Inc. in Monroe, Mich., said his company installed its first ES7000 in December 2000 for server consolidation purposes and has since added two more boxes to run its new PeopleSoft ERP system.

"Right now, without question, we're sticking with the Datacenter program," said Clark. "I don't want to deal with multiple vendors relative to how I get my support for my mixed environment. . . . It's a premium price, but we've found time and again that it has come through for us." **46573**

WebSphere Tools Upgraded To Ease Java Development

But improvements may not help Java novices, analysts say

BY CAROL SLIWA

IBM tomorrow plans to announce an upgrade to its WebSphere Studio tools line that's intended to ease development in a Java environment.

The primary addition to WebSphere Studio Version 5.1.2 is support for the recently finalized JavaServer Faces standard, which simplifies the building of rich user interfaces.

WebSphere Studio also supports an early version of Service Data Objects (SDO), which provides a unified programming model for accessing data from heterogeneous systems, including XML-based data sources and Web services. SDO has yet to be finalized by the Java Community Process established by Sun Microsystems Inc. to evolve Java technology.

Site Developer and Application Developer editions of WebSphere Studio also add support for a modernized edition of IBM's Enterprise Generation Language (EGL), which IBM said it expects will be especially helpful to Cobol and Informix 4GL users. Lee Nackman, vice president of desktop development tools and chief technology officer of IBM's Rational Software division, said EGL is aimed at programmers who don't want to get involved in object-oriented programming and inheritance.

IBM's WebSphere Studio upgrade marks the latest in a series of announcements focused on the theme of easing Java development. But as with some other vendors' new releases, analysts questioned how much the improvements will really help developers who are unfamiliar with Java.

Thomas Murphy, an analyst at Stamford, Conn.-based Meta Group Inc., said WebSphere Studio 5.1.2 reduces some of the barriers to developing basic Java and database Web applications. But he said he thinks it will be most appealing to those who already use Java. He said WebSphere Studio remains "packed," as opposed to the slimmed-down user interface found in Sun's upcoming Java Studio Creator.

Mark Driver, an analyst at Stamford, Conn.-based Gartner Inc., said WebSphere Studio still doesn't approach the ease of use of tools such as BEA Systems Inc.'s WebLogic Workshop. He added that he doesn't think Visual Basic or PowerBuilder programmers will use EGL, and he predicted that they will continue to struggle with Java overall. "EGL will allow Cobol programmers to be productive in Java, but I don't see a lot of demand for it beyond that," Driver said.

WebSphere Studio Application Developer and Site Developer 5.1.2 are due in mid-May, and enterprise and integration editions will follow later. **46570**

WHAT'S NEW

IBM WebSphere Studio 5.1.2

The new version supports:

- JavaServer Faces
- Service Data Objects
- Enterprise Generation Language
- Portal development

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FRANK HAYES ■ FRANKLY SPEAKING

Shameless

IT'S YOUR FAULT. Yeah you, Mr. or Ms. Corporate IT Person. Microsoft says it's your fault, and the fault of your users, that there are so many security problems with Microsoft software. Oh, sure, there are security holes in Microsoft products. But Microsoft *does* patch them — eventually. And unless corporate IT does a better job of promptly applying those patches, as well as training users in safe computing practices — well, there's only so much Microsoft can do.

Yes, at Microsoft irony *is* dead. And so, apparently, is shame.

See, last week a high-level Microsoft manager named Jonathan Perera was making the it's-your-fault-too pitch at the Infosecurity Europe conference in London. At exactly the same time, security companies were reporting a new round of attacks on Microsoft products, including IIS and Exchange Server, based on yet another Microsoft buffer overflow vulnerability.

Microsoft had issued a patch for that security hole just two weeks earlier. But the hole is in every version of Windows NT and XP Pro that has shipped since Windows NT 4.0 in 1996.

In other words, it took Microsoft almost eight years to find and fix this hole — a hole that exists only because of Microsoft product development policies that in another profession would be called malpractice. But now we're told it's corporate IT's fault too, because in two weeks we haven't patched the 12.5 million servers and 200 million client PCs affected. (That's the current Windows NT, Server and XP Professional installed base, according to IDC.)

Why haven't we patched them? Everybody knows the answer: because of the cost. There's such a continuous stream of patches from Microsoft that we can't afford to apply every patch immediately.

Why doesn't Microsoft get it right the first time — or the second time, or the third — so all those patches won't be necessary? Remember, this most recent security hole has survived code reviews for several generations of Microsoft products, including the supposedly improved security vetting Microsoft has put in place since the start of its Trusted Computing initiative.

The answer is the same: the cost. A buffer overrun isn't a subtle bug, and it's not hard to spot — if you're looking. But Microsoft doesn't want to spend the money to carefully examine every line of code before it ships. That would just be too expensive.

Microsoft would rather wait until hundreds of millions of copies are in use — so *we're* the ones who pay for applying those patches.

Of course, customers will foot the bill in either case. If the code is fixed before it ships, we pay in higher prices. If it's fixed after it ships, we have the cost of patching.

But how much is it? Let's say it costs $80 for the average IT shop to apply this most recent patch to each affected Windows server. That includes all the costs of testing, resolving conflicts and deploying — in other words, $80 is a spectacularly lowball estimate.

But it still means a total cost to corporate IT of $1 billion.

And that's just for the servers. You want to patch all the NT Workstation and XP Pro PCs? Even at an average cost of $5 each — another lowball estimate — that's *another* $1 billion.

Think Microsoft's programmers could've found this bug before shipping the software for a lot less than $2 billion? Betcha they could have.

Then we'd have at least one less security problem to deal with. And we could be applying our security resources to educating users in safe computing — like Microsoft says we should be doing — instead of spending them furiously applying one billion-dollar patch after another. Patches that would be unnecessary if Microsoft's "it's your fault too" management had decided to get the code right before it shipped. Which would also have fixed the problems at a much lower overall cost.

Pretty ironic, huh?

Or maybe just shameful. 46535

FRANK HAYES, *Computerworld*'s senior news columnist, has covered IT for more than 20 years. Contact him at frank_hayes@computerworld.com.

SHARK TANK

But Such a Deal!

It's the early 1990s, and this developer pilot fish needs to make sure the communications software he's working on will function with most commonly used modems. "We prepared a list of the top dozen brands and sent the request to the corporate IT purchasing department," fish says. "A few weeks later, we received 12 identical modems. When we asked why, Purchasing proudly replied, 'We were able to save more than $100 over your original request by getting a volume discount on the same model!' "

Lockdown

Senior programmer writes the code to lock users out of a custom accounting application after three failed log-in tries. It goes live, a user gets locked out – and the help desk learns there's no way to unlock an account. "There is no unlock utility, because the programmer wasn't asked to create one," sighs pilot fish who watched it all. "The programmer has to go into a table and delete one of the unsuccessful attempt entries."

That's How Hard

The shipping guy is on vacation, and an exec needs a new PC right away. How hard can shipping a PC be? "I put the computer in an empty box and fill it with the first thing I find: Styrofoam peanuts," says this pilot fish. The box is transported to the exec's office, and fish opens it. "All of a sudden, thanks to static electricity, it's like Christmas. Styrofoam peanuts explode into the air and attach themselves to *everything* – the computer, furniture, walls, the executive and the secretary. It would have been awkward except that all three of us were laughing so hard."

Time Saver

This bank employee sends and receives lots of faxes every day, so an IT pilot fish is asked to install a fax machine next to his desk. But an hour after he gets it up and running, fish spots the employee waiting in line at the old fax machine. Isn't the new machine working? fish asks him. "I didn't try it," employee admits. "It doesn't have all the speed dials loaded, and I didn't want to waste time typing in the phone number."

Résumé Truth

This town's new chief administrative officer claims in his résumé that as city manager in a smaller town, he managed his community's IT efforts. Funny thing, says a pilot fish who's skeptical about the new boss: "So did his deputy city manager, who also works for us now. IT must have required massive intervention there, as it was outsourced. I guess those pesky consultants need a firm hand."

TOSS ME SOME CHUM: sharky@computerworld.com
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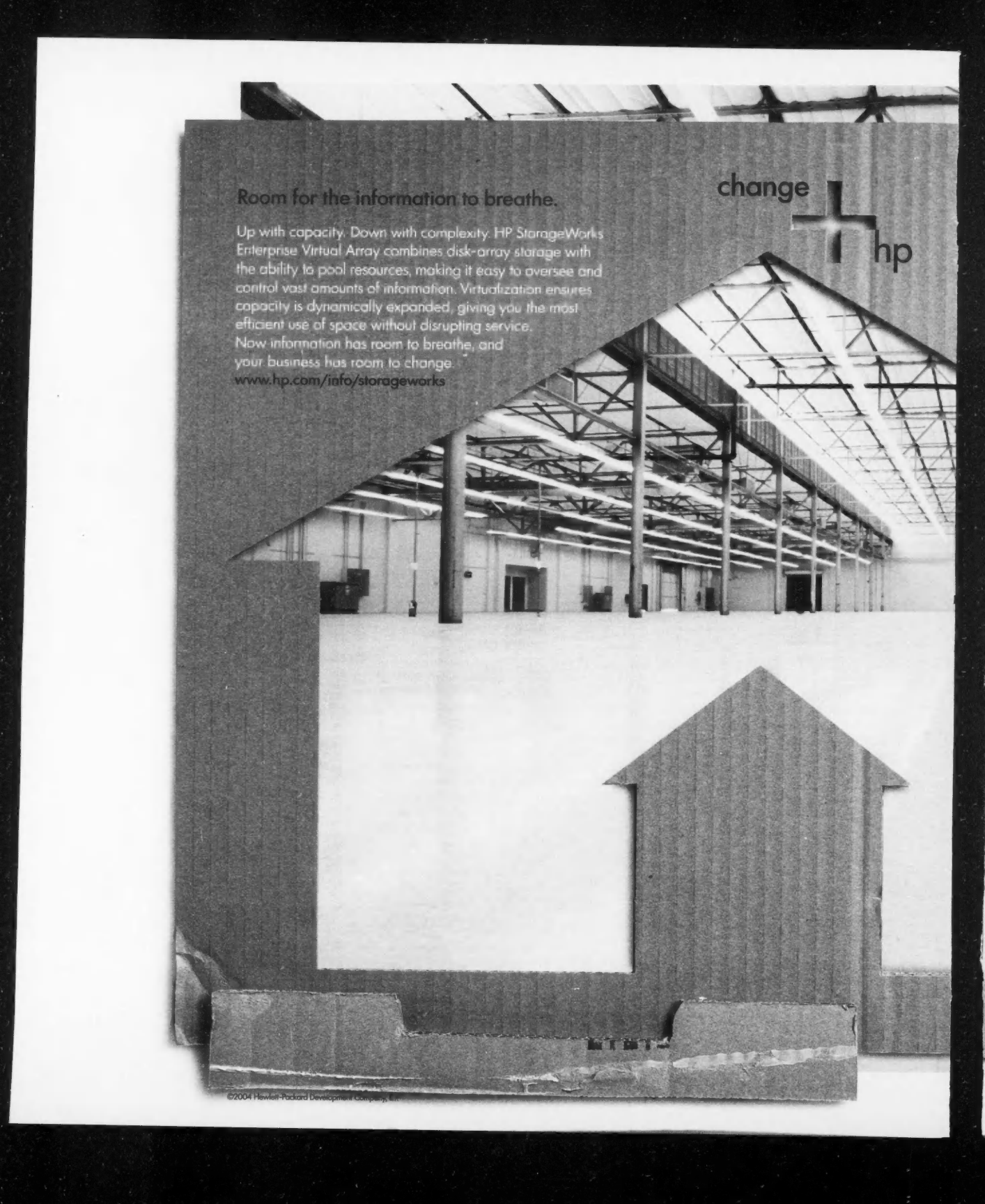
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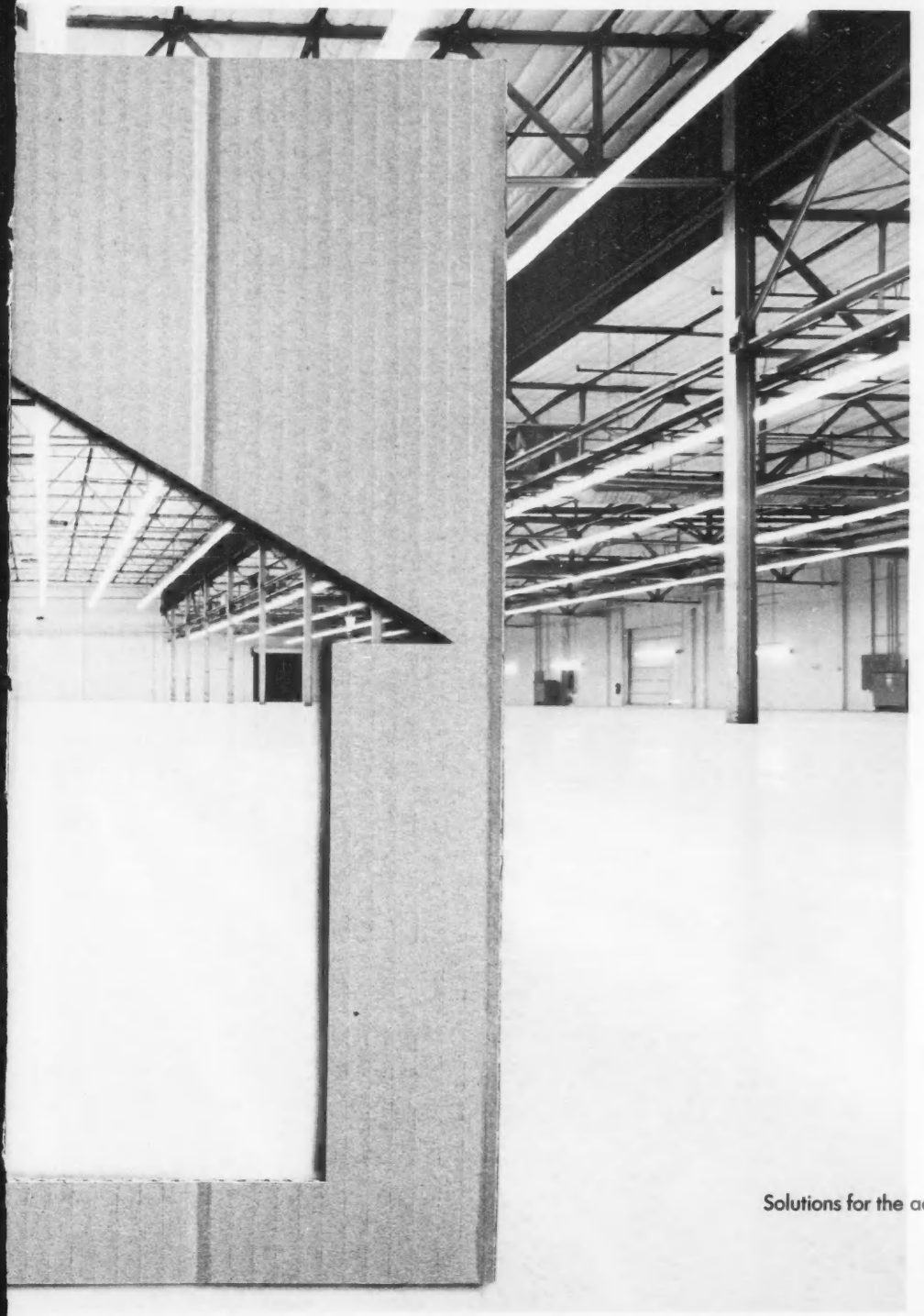

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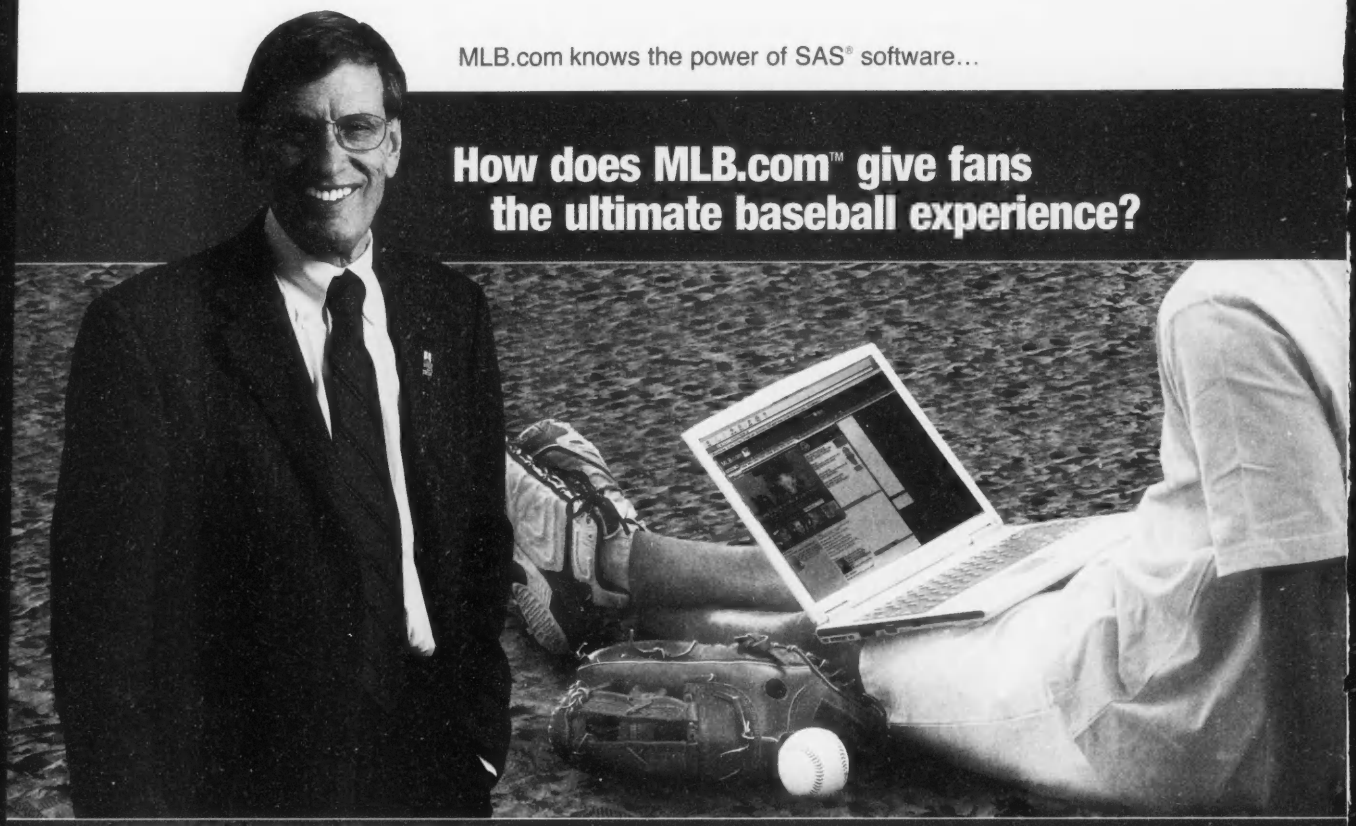

Allan H. "Bud" Selig, Commissioner of Major League Baseball

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